```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic -
       11654
11654
                                                                                                                                                                                                                                                                                                        Pred. No. score grea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BB BB
                                                                                                                                                                                                                                 Score
   442.056
422.056
422.056
                                                                                                                                                                                                                                                                                             19
                                                                                                                             53
49
46
46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq
                                                                                                                                                                                                                                                                                           No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length:
                                                                                                                                                                                                                              Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    October 27, 2002, 15:09:08; Search time 968.083 Seconds (without alignments) 6775.784 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                              8:
9:
10:
11:
12:
13:
14:
15:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST:*
1: em_
2: em_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13736207 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-677-374-1
   atgaacagaggatgtttgca..........aagtcatttcaacagaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version Copyright (c) 1993 - 2002
                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:*
gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estpl:*
em_estro:*
em_htc:*
                                                                                                                                                                                                                                                                                                                                           em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estba:*
                                                                                                                                                                                                                                                                                                                                                                                            gb_gss:*
                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000000000
                                                                                                                                                                                                                                 DB
     6748477542 residues
  BH133989
BH165606
CNSO3WF6
AZ685166
CNSO3WF8
BJ009355
CNSO0UTL
CNSO0UTL
CNSO0CNG
BH164851
BH164851
BE801262
AU052941
BE801263
B1471035
B1471035
B1476637
AZ753057
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.1.3
Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27472414
 BH133989 ENTWH17TF
BH162606 ENTRYOBTF
ALZ63436 Tetraodon
AZ685166 ENTLG11TF
ALZ64753 Tetraodon
BJ001798 BJ001798
BJ001955 BJ009355
BJ009355 BJ009355
AL075720 Drosophi1
AL05940 Drosophi1
BH164851 ENTQT04TF
AU052962 AU052962
AU052962
AU052961
BER01262 Sr11g06.y
BH471035 Sah92106.
AL253341 Tetraodon
BH17637 EST517582
AZ753057 RPCI-24-8
                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
BH133989
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                            JOURNAL
COMMENT
                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         000000000000000
                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.8
41.8
41.6
41.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4114141
                                                                                                                                       Class: shotgun
High quality sequence start: 17
High quality sequence stop: 490
                                                                                                                                                                                                                Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 838 0208
Fax: 301 838 3543
Email: bjloftus@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                         genomic, DNA sequence.
BH133989
BH133989.1 GI:15093050
GSS.
                                                                                                                                                                                                                                                                                                                  Loftus,B., Wang,Z., Van Aken,S. and Fraser,C.
Determination of clone end sequences from Entamoeba histolytica
HM1:IMSS sheared DNA library (2001)
                                                                                                                                                                             DNA library
Seq primer: M13-Forward
                                                                                                                                                                                                      Clones are derived from the
                                                                                                                                                                                                                                                                                            Unpublished (2001)
Contact: Brendan J Loftus
                                                                                                                                                                                                                                                                                                                                                                                 Entamoeba histolytica.
Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENTNW17TF
                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Entamoebidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /Organism="Entamoeba histolytica"
/Strain="HM1:IMSS"
/db_xref="taxon:5759"
/db_xref="taxon:5759"
/dlone_lib="Entamoeba histolytica Sheared DNA"
/clone_lib="Pottamoeba histolytica Sheared DNA"
/note="Yector: pHOS1; Site_1: Bst I; Constructed at The
Institute for Genomic Research (TIGR), Rockfille, MD
Genomic DNA isolated from broth cultures of E. histolytica
using a method described by Clark and Diamond (Clark,
C.G., and Diamond, L.S. (1993) Entamoeba histolytica: a
                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                         998 bp DNA linear GSS 07-AUG-20
Entamoeba histolytica Sheared DNA Entamoeba histolytica
                                                                                                                   . 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
431
509
520
521
531
531
543
543
543
661
173
559
661
173
1050
1050
1050
1050
1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11229911221122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AU060486
AU033804
AZ304119
AZ379826
BH393056
CNS00172
AQ690676
CNS003KS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI442486
BE555999
BE805704
AW734942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AI443457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AZ627893
CNS01MHE
AU060898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BM093415
BG790034
B1784659
B1701733
CNS04RW2
BH483310
BE603900
CNS0075A
BM159224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                      Entamoeba
                                                                                                                                                                                                      Entamoeba histolytica HM1: IMSS sheared
                                                                                                                                                                                                                                                         ¥
                                                                                                                                                                                                                                                         20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ627893 1M0469I18
AL150931 Anopheles
AU060898 AU060898
AL066867 Drosophil
AI437626 sa37606 y
BG352395 sac03d01.
AI443457 sa33h07 y
AI442486 sa27f06. y
BE55599 sp96d11. y
BE805704 ss48f09 y
BE805704 ss48f09 y
BH734942 sk93b01. y
BH734942 sk93b01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 07-AUG-2001
```

000000 0 000000

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
BH162606/c
                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γQ
                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         501 TACTGATGATAAAAAGATAAATACCCCCAGAAACAAACTGAAAAA 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144 AGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321 TGGTGGTGCTCATTGGTGGTGCTGTTGGTGCTGTTGGTGGTGTTGTCATTGGTGGTGT 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84 AGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGTTTGGTAA 143
                                                                                                                                                           High quality sequence start: 30
High quality sequence stop: 768
Location/Qualifiers
                                                                                                                                                                                                                                               Loftus, B., Wang Z., Van Aken, S. and Fraser, C.

Determination of clone end sequences from Entamoeba histolytica

HM1:IMSS sheared DNA library (2001)

Contact: Brendan J Loftus

Department of Eukaryotic Genomics

712 Medical Center of Genomics

721 Medical Center Dr., Rockville, MD 20850, USA

Fax: 301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24 TAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGTCA 83
                                                                                                                                                                                                         Seq primer: M13-Forward
Class: shotgun
                                                                                                                                                                                                                                    DNA library
                                                                                                                                                                                                                                         Email: bjloftus@tigr.org
Clones are derived from (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Entamoebidae; Entamoeba
1 (bases 1 to 868)
                                                                                                                                                                                                                                                                                                                                                                                                                      Entamoeba histolytica
Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                          BH162606.1 GI:15736044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENTRVORTE Entamoeba histolytica Sheared DNA linear GS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
/Clone_lib="Entamoeba histolytica Sheared DNA"
/Toto="Vector: pHoS1; Site_1: BSt I; Constructed at The
Institute for Genomic Research (TIGR), Rockytille, MD.
Genomic DNA isolated from broth cultures of E. histolytica
using a method described by Clark and Diamond (Clark,
C.G., and Diamond, L.S. (1993) Entamoeba histolytica:
method for isolate identification. Exp. Parasitol.
                                                                                                             /db_xref="taxon:5759"
                                                                                                                  /organism="Entamoeba histolytica"
/Strain="HM1:IMSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                348 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               method for isolate identification. Exp. Parasitol. 77:450.). The DNA was mechanically sheared to give a the library construction (-2 kb). The v + i method used for whole genome shotum sequencing small insert libraries for Sequencing: A practical Approach, eds. M. Vaudin and B. 144 c 238 g 268 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.1%;
52.4%;
                                                                                                                                                                                                                   from the Entamoeba histolytica HM1:IMSS sheared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 53.8; DB 12;
Pred. No. 0.00054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 24-SEP-2001
ba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                       FEATURES
                                                                                                                                             JOURNAL
REFERENCE
                                                                                          COMMENT
                                                                                                                                                                                                                                 JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                       JOURNAL
                                                                                                                               AUTHORS
                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                         source
                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
```

В

```
RESULT 3
CNS03W9F/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112 TGTTGTTGGT 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                204 TAAAATCGGT 213
                                              Genoscope.

Genoscope.

Direct Submitsion

Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases
This sequence is a single read and was generated as part of a largenome. For more information, please take a look at

http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rossi 1 to 279)
Rossi Crollus, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24 TAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGTCA 83
                                                                                                                                                                                                                                                                                            Charaterization and repeat analysis of the compact genome of the compact genome of the
                                                                                                                                                                                                                                                                                                                                                                                           Elkaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostomi; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                            Weissenbach,J.
                                                                                                                                                                                                                                                                                                                                                                            Bouneau, L.
                                                                                                                                                                                                                                                                                                                                                                                 Roest-Crollius, H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS; genome survey sequence.
Tetraodon nigroviridis.
Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tetraodon nigroviridis genome survey sequence PUC-Ori end of clc
063D14 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL263436.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNS03W9F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
/organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="063D14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                         llius,H., Jaillon,O., Dasilva,C., Fizames,C.,
Billault,A., Quetler,F., Saurin,W., Bernot,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:7985098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77:450.). The DNA was mechanically sheared to give a the library construction (-2 kb). The v + i method used for H.O. and Venter, J.C. (Making small insert libraries for whole genome shotgun sequencing projects. In Genome Barell, Oxford University Press, 1999). Waudin and B. 211 c 57 g 325 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.88; Score 52.4; DB 12; 54.78; Pred. No. 0.0012; 0; Mismatches 86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 868;
                                                                                                                                                                                                                                                                                                                                         Bernot, A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSS 18-MAY-2000
ri end of clone
                                                                                             of a large
                                                                                                                                                                                                                                                                                                                                                       Fisher, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
AZ685166/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   47 TGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTGTTGGCGGTGTTGCCTGGCCAGCTGTTTTGGTAAAGGTAGTGGTCGAGTTGCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGGTGGTGGTGGTGGTGGTGGTGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           845 bp ENTLG11TF Entamoeba histolytica genomic. DNA accurate
                                                                                                                                                                                                                                                                                                                                                                                                                 Class: shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: bjloftus@tigr.org Clones are derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Department of Eukaryotic Genomics
The Institute for Genomic Researc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Loftus, B., Van Aken, S. and Fraser, C. Determination of clone end sequences HM1: IMSS sheared DNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: M13-Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Brendan J Loftus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Entamoebidae; Entamoeba 1 (bases 1 to 845)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         genomic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Entamoeba histolytica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AZ685166.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Institute for Genomic Research
                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106
                                                                                                                                                                                                                                                                                                                                                            quality sequence start: 26 quality sequence stop: 726. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 838 0208
301 838 3543
                        /db_xref="tax.n:5759"
/db_xref="tax.n:5759"
/clone_lib="Entamoeba histolytica Sheared DNA"
/note="Vector: pHOS1; Site_1: Bst I; Constructed at The
Institute for Genomic Research (TIGR), Rockville, MD.
Genomic DNA isolated from broth cultures of E. histolytica
using a method described by Clark and Diamond (Clark,
C.G., and Diamond, L.S. (1993) Entamoeba histolytica: a
method for isolate identification. Exp. Parasitol.
77:450.) The DNA was mechanically sheared to give a
tight size distribution (-2 kb). The v + i method used for
the library construction is described in detail in Smith,
H.O. and Venter, J.C. (Making small insert libraries for
whole genome shotgun sequencing projects. In Genome
Sequencing: A Practical Approach, eds. M. Vaudin and B.
Barell, Oxford University Press, 1999)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Medical Center Dr., Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA sequence.
                  Barell, Oxford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="G"
/note="Genoscope sequence ID : C0BG063DB07SP1~end PUC-Ori"
155 c 2 g 13 t 3 others
                                                                                                                                                                                                                                                                                                             /strain="HM1:IMSS"
                                                                                                                                                                                                                                                                                                                            /organism="Entamoeba histolytica"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:11822312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 49.6; DB 1
Pred. No. 0.0052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sheared DNA Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           histolytica HM1:IMSS sheared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 14-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CNS03PK8/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
Query Match 9.5%;
Best Local Similarity 52.6%;
Matches 101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       563 TTGAAAATTAATTAAA 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               743 TIGGTCCTGTTGTCATTGGTGGTGTTGTTGGTGGTGTTGATGGTGCTGTTGGTGGTGCTG 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194 TAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGA 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      683 TTGGTGGTGCTGTTGGTGGTGATGTTGGTGGTGCTGGTGGTGGTGCTGTCATTGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74 TTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGC 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGAT 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTTGGAAAAGGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGTTGGTGGTGTTGGTGTTAGTGATGTTATGAAAAAGACAAGTAACACCAAAAAAA
                                                                                                                                                                                                                                                      Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases This sequence is a single read and was generated as part of a lar scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS; genome survey sequence. Tetraodon nigroviridis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Roest-Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fish Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tetraodon nigroviridis genome survey sequence PUC-Ori end of cl
045118 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                       Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                             Tetraodon nigroviridis DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                Human gene number estimate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Weissenbach,J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL254753.1 GI:7975765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CNS03PK8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tetraodontidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 325)
                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 325)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases
                                                                                           157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                         a
                                                                                        /clone_lib="G"
/note="Genoscope sequence
pUC-Ori"
157 c 10 g 0
                                                                                                                                                              /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="045118"
                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 to 325)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.7%;
52.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
   0;
                 Score 46.4; DB
Pred. No. 0.04;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 47.2; DB 12; Pred. No. 0.032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           325
                                                                                                                                                                                                                                                                                                                                                                                                                         provided by genome wide analysis using sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ďď
                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                ID : COBG045BE09SP1~end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93;
   91;
                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear G
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bernot, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            845;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 17-MAY-2000
 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fisher, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fisher, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      624
                                                                                                                                                                                                                                                                                                                  a large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
453 GTTTCGATGGTTTTGGTGGTACTGTAGACGATGGTTTTGGTGGTGCTGTAGACGATGGTT 394
                                                                                                                 74 TTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGTGTTGTTGGCGGTGTTGCTGGCCAGC 133
                                           TAGACGGTGGTTTTGGTGGTGCTGTAGACGGTGGTTTTGGTGATACTGTAGACGGTGGTG 274
                                                            TGTTTGGTAAAGGTAGTGGAGTTGCAATGGCCATTGGTGGTGGTGTTTTTGGGTGGAT 193
                                                                                                 TTGGTGGTGCTGTAGACTGTGGTGCTAATGGTGCTGTAGACGATGGTTTTGGTGGTGCTG
                                                                                                                                                                             GTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center For Genetic Resource Information National Institute of Genetics 1111 Yata, Mishima, Shizuoka 411-8540, Tel: 81-559-81-6856
                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: tshini@genes.nig.ac.jp.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KOhara,Y., Shin-1,T., Kimura,T., Narita,T., Jindo,T. and Takeda,H. Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha; Beloniformes; Adrianichthyldae; Oryzinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTAGTAGTCTAATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BJ001798 MF018SA cDNA Oryzias
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BJ001798.1 GI:17364689
                                                                                                                                                                                                                                                                                          /organism="Gryzias latipes"
/strain="Hd-rR"
/strain="Hd-rR"
/db_xref="taxon:8090"
/clone="Me01SSA07D02"
/clone_ib="ME01SSA CDNA"
/clone_ib="ME01SSA CDNA"
/clone_ib="Me01SSA CDNA"
/clone_ib="Sey="mixture of female and male"
/tissue_type="whole embryo"
/dev_stage="segmentation stage 20 - 25
a 248 c 64 g 104 t
                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                      Score 46.4; DB 10;
Pred. No. 0.049;
0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    624 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       411-8540, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   latipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NA linear EST 05-DEC-2001 CDNA clone MF01SSA027D02 5',
                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                         25 =
                                                                                                                                                                                                                                              624;
                                                                                                                                                                                                                   0;
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                               0;
      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                 RESULT 8
                                                                                        DEFINITION
                                                                                                                                                                             DЬ
                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
BJ009355/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                              582 CTGGTGGTACTATAGACGGT 563
                                                                                                                                                                                     194 TAATTGGTTCTAAAATCGGT 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                642
                                                                                                                                                                                                                                                         702 TTGGTGGTGCTGTAGACTGTGGTGCTAATGGTGCTGTAGACGATGGTTTTTGGTGGTGCTG
                                                                                                                                                                                                                                                                                                                                               762
                                                                                                                                                                                                                                                                         74 TTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGTGTTGTTGGCGGGTGTTGCTGGCCAGC 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                             14 GTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                         TGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGAT 193
                                                                                                                                                                                                     TAGACGGTGGTTTTGGTGGTGGTGGTAGACGGTGGTTTTTGGTGATACTGTAGACGGTGGTG 583
               CNS00JTL 909 bp DNA linear GSS 03-JUN-1999 BACR39G08 of RPCI-98 library from Drosophila melanogaster (fruit AL076720
                                                                                                                                                                                                                                                                                                                 GTTTCGATGGTTTTGGTGGTACTGTAGACGATGGTTTTGGTGGTGCTGTAGACGATGGTT 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273
fruit fly
                                                                                                                                                                                                                                                                                                                                                                                                104;
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Tadasu Shin-i
Center For Genetic Resource Information
National Institute of Genetics
1111 Yata, Mishima, Shizuoka 411-8540, Japan
Tel: 81-559-81-6855
Fax: 81-559-81-6855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: tshini@genes.nig.ac.jp
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KOhara,Y., Shin-i,T., Kimura,T., Narita,T., Medaka EST Project in Takeda's lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleos; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neotele; Acanthomorpha; Acanthopterygii; Percomorpha; Atherinomorpha; Beloniformes; Adrianichthyidae; Oryziinae; Oryzias.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oryzias latipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Japanese medaka.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BJ009355.1 GI:17356777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BJ009355
BJ009355 MF01SSA cDNA Oryzias latipes cDNA clone MF01SSA131D04 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250 a
                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="segmentation stage 20 - 318 c 130 g 169 t 5 o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="MF0ISSA cDNA"
/sex="mixture of female and male"
/tissue_type="whole embryo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:8090"
/clone="MF01SSA131D04"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Oryzias latipes"
/strain="Hd-rR"
                                                                                                                                                                                                                                                                                                                                                                                                      9.5%;
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                               Score 46.4; DB 10;
Pred. No. 0.054;
0; Mismatches 96;
                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 others
                                                                                                                                                                                                                                                                                                                                                                                                        Length 872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jindo, T.
                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
; Neoteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and Takeda, H.
                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                            643
                                                                                                                                                                                                                                                                                                                                                73
                                                                                                                                                                                                                                                                                                                                                                       0;
```

DЬ δÃ Дò Qγ ДЪ Qγ

333 134 393

194 TAATTGGTTCTAAAATCGGT 213

BASE COUNT ORIGIN

208 a

Matches

14

Query Match Best Local

Local

Similarity

9.5%;

Conservative

FEATURES

81-559-81-6855

source

REFERENCE AUTHORS

TITLE

SOURCE ORGANISM

Oryzias latipes Japanese medaka.

KEYWORDS VERSION ACCESSION DEFINITION

sequence.

RESULT 6 BJ001798/c

Locus

Дb δ

57

GTTGTTGTTGGT 46

202 TCTAAAATCGGT 213

Ъ Qγ DЪ Qγ

> 142 177

В

237 22

COMMENT

JOURNAL

٨

```
RESULT 9
CNSOOCNG/c
                 REFERENCE
AUTHORS
                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
  TITLE
                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                    865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10 GGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Determination of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP). The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de JOng's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic Strain y2; cn bw sp, the same strain used for the BDGP's Pl and EST libraries. A more detailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATTAATTGGTTCT 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGT 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KGKTKKTGTTKKTKTKKKKKNKKKTKTKTGTKTGMGKKTTKKKKTKGGKGKGKGKGKGKG 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGTGTTGCTGGC 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KTGKTKTTKKTTTKT 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster genome survey sequence BACR26H16 of RPCI-98 library from Drosophila fly), genomic survey sequence.
                                                      Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                        Drosophila melanogaster
                                                                                                                                                                 GSS
                                                                                                                                                                                                                                                                                           CNS00CNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 909)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster
Direct Submission
                                                                                                                                                                                  AL059400.1 GI:4946964
                                                                                                                                                                                                          AL059400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genoscope
                                                                                                                                             fruit fly.

    Web : www.genoscope.cns.fr)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                     (bases 1 to 939)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="RPCI-98"
/clone="BACR39G08"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="end : TET3"
55 c 175 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46; DB 1
Pred. No. 0.07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                         939 bp
                                                                                                                                                                                                                                                                 Survey sequence TET3 end of BAC #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 12; Length 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      as part of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
BH164851
                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 AGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Determination of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP). The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic Strain y2; on bw sp, the same strain used for the BDGP's pl and EST libraries. A more detailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGA 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCT 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KKKKKKKGGAKDGKKKGKGGGGGGGKKRAADRKKKKGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTG 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
14; Conserv
  Email: bjloftus@tigr.org
Clones are derived from
                                                                                    Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
                                                                                                                                                                                            1 (bases 1 to 890)
LOftus, B., Wang, Z., Van Aken, S. and Fraser, C.
Determination of clone end sequences from Ent
HM1:IMSS sheared DNA library (2001)
                                                                                                                                                                                                                                                                                                                                                   GSS
                                                                                                                                                                                                                                                                                                                                                                            BH164851.1 GI:15738289
                                                                                                                                                                                                                                                                                                                                                                                                genomic, DNA sequence.
BH164851
                                                                                                                                                                                                                                                                                                                                                                                                                                       BH164851 890 bp
ENTQT04TF Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
                                                                                 9712 Medical Center Dr.,
                                                                                                                                                    Contact: Brendan J Loftus
                                                                                                                                                                             Unpublished (2001)
                                                                                                                                                                                                                                                                                     Eukaryota; Entamoebidae; Entamoeba
                                                                                                                                                                                                                                                                                                          Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                 Entamoeba histolytica.
                                           301 838 0208
301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone_lib="RRCI-98"
/clone="BACR26H16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="end : TET3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5%; Score 46; DB
b; Pred. No. 0.07;
133; Mismatches
from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104
  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ģ
Entamoeba histolytica HM1: IMSS sheared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                            Sheared DNA Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                      MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235 others
                                                                                                                                                                                                                      Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSS 24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RASE COUNT ORIGIN
                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                           JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
AU052962/c
                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    163 ATGGCCATTGGTGGTGGTGTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   656 GGTGCTTGGTGGTGCTGGTGGTGCTCATTGGT 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103 GGGCTGTTGTTGCCGGTGTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCA 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                596 Gredererrerregreererreareerecrerregreerecreereerecrerregreerecrerregr 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                              PROJECT
                                                                                                                                                                                                            University of Tsukuba
                                                                                                                                                                                                                                      Unpublished (1998)
Contact: Hideko Urushihara
                                                                                                                                                                                                                                        l (bases 1 to 427)
Morio,T., Urushihara,H., Saito,T., Ugawa,Y., Mizuno,H., Yoshida,M., Yoshino,R., Mitra,B.N., Pi.M., Sato,T., Takemoto,K., Yasukawa,H., Millams,J., Maeda,M., Takeuchi,I., Ochiai,H. and Tanaka,H., Developmental cDNA in Dictyostelium discoideum
                                                                                                                                                                                   3-3-10 Ten-nodai, Tsukuba, Ibaraki 305,
                                                                                                                                                                                                                    Institute of Biological Sciences
                                                                                                                                                                                                                                                                                                                               Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium.
                                                                                                                                                                                                                                                                                                                                                               Dictyostelium discoideum.
Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                    AU052962
AU052962 Dictyostelium discoideum SL (H.Urushihara)
discoideum cDNA clone SLF389, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                          AU052962.1 GI:4701445
                                        231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA library
Seg primer: M13-Forward
Class: shotgun
                                                                                                                                              d402hu@sakura.cc.tsukuba.ac.jp
T = Dictyostelium discoldeum cDNA project
/organism="Dictyostelium discoideum"
/strain="AX4"
/strain="AX4"
/strain="AX4"
/strain="AX4"
/db_xref="taxon:44689"
/clone="str389"
/clone_lib="pictyostelium discoideum SL (H.Urushihara)"
/dev_stage="slug"
a 105 c 25 g 66 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="Entamoeba histolytica Sheared DNA"
/note="Vector: pHOS1; Site_1: Bst I; Constructed at The
Institute for Genomic Research (TIGR), Rockville; MD.
Genomic DNA isolated from broth cultures of E. histolytica
using a method described by Clark and Diamond (Clark,
method for isolate identification. Exp. Parasitol.
Tight size distribution (-2 kb). The V-Parasitol.
the library construction is described in detail in Smith,
Sequencing: A Practical Approach, eds. M. Vaudin and B.
Barell, Oxford University Press, 1999)." Vaudin and B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        quality sequence start: 15 quality sequence stop: 633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.2%;
65.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Entamoeba histolytica"
/strain="HM1:IMSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:5759"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Locati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              on/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44.6,
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                               in Japan.
                                                                                                                                                                                                                                                                                                                                                                                                                             EST 28-APR-1999
Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
           DЪ
                                    Qy
                                                                      ДЪ
                                                                                                 Qy
                                                                                                                                ДЬ
```

```
δδ
                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
AU052941/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
191 GATTAATTGGTT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЪ
     131 AGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
G
                                                                                          Ŋ
                                                                                                         11 GATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGA 70
                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                    ACTTTAGTCGTCAAGAAGTCGGAGGTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191 GATTAATTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    357 GÁTGGTGCAGÁGTTÁTTÁCTATTÁTTGTTÁTTÁTTATTATTATTATTGTTGTTGTTGTTGTTGTTG 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297
                                                                                                                                                                 99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 GATGTITGCAAGGTAGTAGTGTTATTATTATTATGTTTTTTTTTAGTTGGCTGTGCCCAGA 70
                                                                                                                                                                                                                                                                                                                                           I (bases 1 to 440)

A (bases 1 to 440)

Morio, T., Urushihara, H., Saito, T., Ugawa, Y., Mizuno, H., Yoshida, M., Yoshino, R., Mitra, B.N., Pi, M., Sato, T., Takemoto, K., Yasukawa, H., Williams, J., Maeda, M., Takeuchi, I., Ochiai, H. and Tanaka, Y., Developmental cDNA in Dictyostelium discoideum

Unpublished (1998)

Contact: Hideko Urushihara

Contact: Hideko Urushihara
                                                                                                                                                         Similarity 51.6%;
99; Conservative
                                                                                                                                                                                                                                                                                                 Email: d402hu@sakura.cc.tsukuba.ac.jp
PROJECT = Dictyostelium discoideum cDNA project in Japan.
                                                                                                                                                                                                                                                                                                                             University of Tsukuba, Ibaraki 305,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTTGTTGTTT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGTTTGGTAAAGGTAGTGGTCGAGTTGGAATGGCCATTGGTGGTGGTGTTTTGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dictyostelium discoideum.
Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
1 (bases 1 to 440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AU052941 Dictyostelium discoideum SL (H.Urushihara) Dictyostelium discoideum SL (H.Urushihara) Dictyostelium Aunospani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AU052941.1 GI:4701424
                                                                                                                                                                                                                      234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 51.6%;
99; Conservative
                                                                                                                                                                                                    /Clone_lib="Dictyostelium discoideum
/dev_stage="slug"
110 c 26 g 70 t
                                                                                                                                                                                                                                           /db_xref="taxon:44689"
/clone="SLF355"
                                                                                                                                                                                                                                                                  /organism="Dictyostelium discoideum
/strain="AX4"
                                                                                                                                                        0,
                                                                                                                                               Score 43.2; DB 9;
Pred. No. 0.33;
0; Mismatches 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 43.2; DB 9; Length 427; Pred. No. 0.32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                               93;
                                                                                                                                                                 Length 440;
                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93;
                                                                                                                                                                                                                    SL (H.Urushihara)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                      Gaps
                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

밁

190

TIGITGITGITT 179

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE801262/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: est@watson.wustl.edu
This clone is available through: ResGen, Invitrogen Corp.
South Memorial Parkway Huntsville, AL 35801 For further in
call: (800)-533-4363 or contact via email: ccu@resgen.com
Insert Length: 893 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoemaker, R., Keim, P., Vodkin, L., Erpelding, J., Coryell, V., Khanne, A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C. Wylle, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurt, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R., and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE801262

442 bp mRNA linear EST 06-DEC-2001 srl1g06.yl Gm-c1050 Glycine max cDNA clone GENOME SYSTEMS CLONE ID-Gm-c1050-83 5', similar to TR:Q40786 Q40786 ARABINOGALACTAN-PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Shoemaker R/Public Soybean EST Project Public Soybean EST Project Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Public Soybean EST Project 
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE801262.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRECURSOR. ;, mRNA sequence.
                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 442)
                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               quality sequence stop: 420.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314 286 1800
314 286 1810
  Conservative
                                                                                                                                                                                                                   xho; The Clark NIL was constructed and seed was provided by Dr. J. Specht, University of Nebraska (Shoemaker and Specht, 1995). The cDNA library was constructed from mRNA isolated from leaf tissue at various developmental stages of 3 week old greenhouse grown plants. Complementary DNA was synthesized from mRNA using a primer consisting of a poly(dT) sequence with a xhol restriction site and a 3' anchor. EcoRI adapters were ligated to the blunt-ended cDNA fragments followed by XhoI digestion. The cDNA fragments were directioned into the EcoRI-XhoI restriction site of the pBluescript vector. The ligated cDNA fragments were transformed into DHIOB host cells (GibcoBRL). The library was constructed in cooperation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="leaf tissue at various developmental stages
of greenhouse grown plants"
/dev_stage="3 week old"
/lab_bost="bHIOB"
                                                                                                                                                                                     (GibcoBRL). The library was conswith Dr. Paul Keim's laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Glycine max"
/db_xref="taxon:3847"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: pBluescript II SK+; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="GENOME SYSTEMS CLONE ID: Gm-c1050-83"
/clone_lib="Gm-c1050"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:10232374
                          53.3%;
  0;
                          Score 42.6; DB Pred. No. 0.48;
                                                                                                                                        71 g
                                                                                                                                              69
                                                     DB 10;
                                                     Length 442;
                                                                                                                                                                                                    Northern Arizona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 06-DEC-2001
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                information
Gaps
  0,
```

```
RESULT 14
BI471035/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 GAGTTGCAATGGCCATTGGTGGTGCTGTTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ა
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGGTCAAGAAGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCTTGGTGGTGGTGATGGGGTTGTAGTGGGTTGTGTGGGTTC 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGTGGTGGTGGTGGTGGTGGTGGTGCTGGCGGGGTGGGTGTTGGTGCAGGTGCTG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCGACTGGGGCTGTTGTTGGCGGGTGTTGGCCAGCTGTTTGGTAAAGGTAGTGGTC 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shoemaker, R., Keim, P., Vodkin, L., Erpelding, J., Coryell, V., A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., I Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., R., Waterston, R., and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BI471035 452 bp mRNA linear EST 29-sah92f06.yl Gm-c1050 Glycine max cDNA clone GENOME SYSTEMS ID: Gm-c1050-3707 5' similar to TR:Q40786 Q40786 ARABINOGALACTAN-PROTEIN PRECURSOR.; mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Public Soybean EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           soybean.
Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This clone is available through: ResGen, Invitrogen Corp. 2130 South Memorial Parkway Huntsville, AL 35801 For further informaticall: (800)-533-4363 or contact via email: ccu@resgen.com High quality sequence stop: 423.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Shoemaker R/Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI471035.1 GI:15287144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВІ471035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 452)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       314 286 1800
314 286 1810
                                                                                                           /note-*vector: pBluescript II SK+; Site_1: EcoRI; Site_2: XhoI; The Clark NIL was constructed and seed was provided by Dr. J. Specht, University of Nebraska (Shoemaker and Specht, 1995). The cDNA library was constructed from mRNA isolated from leaf tissue at various developmental stages of 3 week old greenhouse grown plants. Complementary DNA was synthesized from mRNA using a primer consisting of a poly(dT) sequence with a XhoI restriction site and a 3' anchor. EcoRI adapters were ligated to the blunt-ended cDNA fragments were directionally cloned into the EcoRI-XhoI fragments were directionally cloned into the EcoRI-XhoI
                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="leaf tissue at various developmental stages
of greenhouse grown plants"
/dev_stage="3 week old"
/lab_host="DH10B"
cDNA fragments were transformed into DH10B host cells (GibcoBRL). The library was constructed in cooperation with Dr. Paul Keim's laboratory at Northern Arizona
                                                                                      restriction , site of the pBluescript vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Glycine max"
/db_xref="taxon:3847"
/clone="GENOME SYSTEMS CLONE ID:
/clone_lib="Gm-c1050"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gm-c1050-3707"
                                   cooperation
                                                                                         The ligated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bowers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Beck, C.,
```

```
Qy . , 77 GTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGT 136
                                                        Ouery Match

Best Local Similarity 56.9%,

"a+ches 78; Conservative
                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
CNS03Q0K/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184 ATCTTGGTGGTGGTGATGGGGTTGTAGTGGGTGGTTGTGTGGGTGC 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                155 GAGTTGCAATGGCCATTGGTGGTGGTTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95 CTGCGACTGGGGCTGTTGGTGGCGGTGTTGGCTAGCTGTTTGGTAAAGGTAGTGGTC 154
                                                                                                                                                                                                                                                                                                                                                      Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ databases This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35 TIATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAG 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human gene number estimate provided by genome wide analysis using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1 to 536)
Roest-Crollius,H., Jaillon,O., Dasilva,C., Bouneau,L., Fisher,C., Bernot,A., Fizames,C., Wincker,P., Brottier,P., Quetier,F., Saurin,W. and Weissenbach,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 (bases 1 to 536)
Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Acthopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Petraodontidae; Tetraodon.; Petraodon.; Petraodon.; Petraodon.; Petraodon.; Petraodon.; Rossi to 536; Rossi-Crollius; H., Jaillon,O., Dasilva,C., Fizames,C., Fisher,C., Welssenbach,J., Billault,A., Quetier,F., Saurin,W., Bernot,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Charaterization and repeat analysis of the compact genome of the reshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS; genome survey sequence. Tetraodon nigroviridis. Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CNS03Q0K
Tetraodon nigroviridis genome survey sequence T7 end of clone source T7 end of clo
                                                                                                                                                                                                                                   163 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL255341.1 GI:7976353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 53.3%;
90; Conservative
                                                                                                                                                                           /Organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="046624"
/clone_1ib="G"
/clone_1ib="G"
/note="Genoscope sequence ID : C0BG046BD12LP1-end : T7"
a 236 c 79 g 43 t 15 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 a
                                                                                                                8.8%;
56.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               University."
193 c
                                                                        ; Score 42.6; DE; Pred. No. 0.5; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 42.6; DB 10; Length 452; Pred. No. 0.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                     DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 t
                                                                                                       Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79;
                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

Searc Job t	Дb	Qy	Db	Qy	Db
Search completed: October 27, 2002, 18:34:51 Job time: 973.083 secs	303 TIGIGIGGIGTIGGI 287	197 TTGGTTCTAAAATCGCT 213	363 GTGTTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTTTAA 196	137 ITGGTAAAGGTAGTGGTCGACTTCCAACTTCCAACTTCGTTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGT	423 GTTGTGGTGGTGGTGGTGGTGGTGGTGGTGTGTGTGTG

Run on:

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B B
    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_NA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        October 27, 2002, 16:06:08; Search time 35.5337 Seconds (without alignments) 3359.570 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   486
1 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   383533 seqs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-677-374-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atgaacagaggatgtttgca.....aagtcatttcaacagaaaaa
      GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000000000
      303
303
303
1198
1198
1046
1046
1098
12072
2072
2072
2077
1690
11690
11690
11561
11561
11561
11561
11561
11561
11561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
US-08-825-781-2

US-09-073-366A-1

US-09-243-2766A-1

US-08-332-766A-1

US-08-276-452A-24

US-08-798-749-25

US-08-298-687A-25

US-08-298-829-25

US-07-968-971A-3

US-08-469-203A-4

US-08-469-203A-4

US-08-469-203A-4

US-08-470-204A-44

US-08-470-204A-44
                                                                                                                                                                                                                                                                                                        US-08-232-463-14
US-08-476-112A-2
US-08-556-978B-80
US-08-556-978B-81
US-08-556-978B-82
PCT-US95-10668-3
PCT-US95-1068-4
US-08-361-467B-4
PCT-US95-10668-2
PCT-US95-10668-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                      sequence
sequence
sequence
sequence
sequence
                                                                          Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                  Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
  Sequence
Sequence
                                        Sequence
Sequence
  14. Appli
80. Appli
81. Appli
81. Appli
82. Appli
83. Appli
44. Appli
45. Appli
27. Appli
27. Appli
27. Appli
27. Appli
28. Appli
29. Appli
29. Appli
29. Appli
20. Appli
21. Appli
21. Appli
22. Appli
23. Appli
24. Appli
25. Appli
26. Appli
27. Appli
28. Appli
29. Appli
20. Appli
21. Appli
22. Appli
23. Appli
24. Appli
25. Appli
26. Appli
27. Appli
28. Appli
29. Appli
29. Appli
29. Appli
20. Appli
20. Appli
20. Appli
21. Appli
22. Appli
23. Appli
24. Appli
25. Appli
26. Appli
27. Appli
28. Appli
29. Appli
29. Appli
20. Ap
                        US-08-232-463-14 PTZgpt-F1s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
US-08-232-463-14/c
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: V
COUNTRY:
                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
```

Result

ð

000000

000000000000

9.88;

Score 47.8;

₽B 1;

Length 7218;

c			O				O	ი	ი	ი	ი	ი	a	ი			
45	44	\$	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28
31	31.2	31.2	31.2	31.2	31.2	31.4	31.4	31.4	31.4	31.4	31.6	31.6	31.6	31.6	31.8	31.8	31.8
6.4	6.4	6.4	6.4	6.4	6.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
1897	2242	1086	744	289	289	3381	3254	925	925	925	1632	1632	1632	1632	5496	2793	2793
н	: ب	_	4	4	4	4	ω	4	ω	ω	σ	w	_	ш	4		-
US-08-453-477-1	US-08-641-627A-37	US-08-415-751-47	US-08-936-165A-75	US-09-244-796-17	US-09-007-005-17	US-09-336-447A-6	US-08-965-903B-1	US-08-997-467-1	US-09-078-166-1	US-08-858-003-1	PCT-US95-11511-34	US-08-717-294-34	US-08-532-390-34	US-08-324-243-34	US-09-462-284-1	US-08-458-298-1	US-08-209-747-1
1,	37,	Sequence 47, Appl	•	•	Sequence 17, Appl	Sequence 6, Appli	Sequence 1, Appli		Sequence 1, Appli	Sequence 1, Appli	Sequence 34, Appl	Sequence 34, Appl	Sequence 34, Appl	Sequence 34, Appl	Sequence 1, Appli	Sequence 1, Appli	Sequence 1, Appli

ALIGNMENTS

Minimum I Maximum I

```
APPLICATION NUMBER: EP 91 114
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 3047
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
TELEPHONE: (703)836-9300
TELEFAX: (703)833-4109
TELEFAX: (703)633-4109
TELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 14, Application Patent No. 5670367 GENERAL INFORMATION:
STRANDEDNESS: s
TOPOLOGY: lines
IMMEDIATE SOURCE:
CLONE: pTZgpt-F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-005/MS-DOS SOTTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS: Foley & Lardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/232,463 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 1500 CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                           nucleic acid
                                                                                                7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1800 Diagonal Road,
                                       linear
                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08232463
                                                                                                                                                                                                                                                                                                                                            EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                      US/07/935,313
                                                                                                                                                                                                                                         30472/114 IMMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Version #1.25
```

В

136 TTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTA 195

Best Local Similarity
Matches 7; Conservat

Conservative

206;

Pred. No. 2.5e-06; Mismatches

. 2.5e-05; atches 138;

Indels

2.0%;

```
US-08-476-102A-2
               Query Match
Best Local Similarity
..
...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-476-102A-2
                                                                                                                           INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2. Application US/08476102A
Patent No. 635450
GENERAL INFORMATION:
APPLICANT: Fleischmann, et al.
TITLE OF INVENTION: Nucleotide Sequence of the Haemphilus
Patent No. 6355450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                       TOPOLOGY: line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: PB186P2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-309-8504
TELEX: 301-309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Marks, Michelle S.
REGISTRATION NUMBER: 41,971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436 ACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA 486
                                                                                                                                                                                                                                            COMPUTER: IBM PC COMPACTION
ODERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA: Release #1.0, Version #1.30
APPLICATION NUMBER: US/08/476,102A
CIASCITICE: 07-Un-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 TATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGC 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                316 TATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences, Inc.
STREET: 9410 Key West Ave.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           256 TTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGT 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 ATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGT 255
                                                                                       TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                              LENGTH: 465 base pairs
                                                                                                                                                                                                                             FILING DATE: 07-Jun-1995
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                    COUNTRY :
                                                                                                                                                                                                                                                                                                                                        20850
            8.8%;
                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                 USA
                                                                    (genomic)
                                                     SEQ ID NO: 2:
     Score 42.6; DB 4;
Pred. No. 0.00027;
           Length 465;
                                                                                                                                                                                                                                                                                                                                                                                                    Fragments Thereof, and Uses Thereof
                     В
                                          Qy
                                                                  DЬ
                                                                                      Qy
```

```
0;
RESULT 4
                                                                                                                                                                                        STRANDEDNESS:
TOPOLOGY: lin.
MOLECULE TYPE:
US-08-556-978B-80
                                                                                                                                          Matches
                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                   NAME: FLOYD, LINDA AXAMETHY RESCISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-9
TELECOMMUNICATION INFORMATION: TELEPHONE: 302-892-8112
TELEFAX: 302-773-0164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
US-08-556-978B-80
; Sequence 80, Application US/08556978B
; Patent No. 6268169
     194 AGGCCCTGGTGCAGCAGCAGCTGCCGCTGGCGGTGGAGGCCAAGGTGGATATGGTGGCT 252
                     144 AGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QY
                                                      134 AGCCGCTGCGGCAGCTGGTGGTGGTCAGGGCGGTCTTGGCTCACAAGGGGCCGGTCA 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 303 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                               84 AGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGGTGGCCAGCTGTTTGGTAA 143
                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: JUNE 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETTE, 3.50 INCH
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS 95
CURRENT APPLICATION DATA:
                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 100,
CITY: WILMINTON
CTATE: DELAWARE
TNITTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: FAHNESTOCK, STEPHEN F.
TITLE OF INVENTION: NOVEL RECOMBINANTLY PRODUCED
SPICER SILK ANALOGS
                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                   of; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195 AATTGGTTCTAAAATCGGTCAATCGATGGATCA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              231 AATTGGCGGTGGTCGTGGTCAAGCTATTGCAGCAGTAGTTGGTGCAATTGGCGGTGCAAT 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135 GTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATT 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171 TAATCAAGGTGTAGTTGGTACGCTTGGTGGTGGACCTTTAGGTGGTATTGCTGGTAGTAC 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75 TAGTCGTCAAGAAGTCGGAGCTGGGGACTGGGGGGCTGTTGTTGGGGGGGTGTTGCTGGCCAGCT 134
                                                                                                                                                                                                                                     nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTGGAAGTAAAATCGAAGAAAAAATGAGTCA 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19898
                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84;
                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: E. I. DU PONT DE NEMOURS AND COMPANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UNITED STATES OF AMERICA
                                                                                                                                                                                           DNA (genomic)
                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                           7.48;
                                                                                                                                                                                                                                                                                                                                                                                     08/077,600
                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/556,978B
                                                                                                                                                                                                                                                                          : 08
                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                             1993
                                                                                                                Score 35.8; DB 4; Length 3
Pred. No. 0.032;
0; Mismatches 52; Indels
                                                                                                                                                                                                                                                                                                                       CR-9389-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                          Length 303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
RESULT 5
US-08-556-978B-82
; Sequence 82, Application US/08556978B
; Patent No. 6268169
; GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: NOVEL RECOMBINANTLY PROTECTION: SPIDER SILK ANALOGS
TITLE OF INVENTION: SPIDER SILK ANALOGS
                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-556-978B-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-556-978B-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 7.4%;
Best Local Similarity 56.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 81,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: 302-773-0164
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UMBER: 08/077,60
APPLICATION UMBER: 15, 1993
ATTORNEY/AGENT INFORMATION:
NAME: FLOYD, LINDA AXAMETHY
REGISTRATION NUMBER: 33,692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: 11 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-9389-A
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS 95
SOFTWARE: MICROSOFT WORD FOR WINDOWS 95
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: FAHNESTOCK, STEPHEN F.
TITLE OF INVENTION: NOVEL RECOMBINANTLY PRODUCED
TITLE OF INVENTION: SPIER SILK ANALOGS
                                                                                                                       NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 100.
CITY: WILMINTON
COTTY: COTTAWARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                               144 AGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTTGGGTGGATTAATTGGTT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                               143 AGGCGCTGGTGCAGCAGCAGCTGCCGCTGGCGGTGCAGGCCAAGGTGGATATGGTGGCT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: f
                                                                                                                                                                                                                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                                                                                                                                                                                                        84 AGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTTTGGTAA 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                COUNTRY:
                                                      STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                     AGCCGCTGCGGCAGCTGGTGGTGGTCAGGGCCGGTCTTGGCTCACAAGGGGGCCGGTCA 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1, Application US/08556978B 6268169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19898
                                                                      WILMINTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic acid
                  19898
                                                   DELAWARE
                                                                                       E: E. I. DU PONT DE NEMOURS AND COMPANY 1007 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: E. I. DU PONT DE NEMOURS AND CÓMPANY 1007 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 302-892-8112
302-773-0164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISKETTE, 3.50 INCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08/077,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/556,978B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 35.8; DB Pred. No. 0.032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                PRODUCED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-556-978B-82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US95-10668-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application PC/TUS9510668 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 7.3%;
Best Local Similarity 53.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 302-773-0164
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                       COMPUTER: IBM 486
OPERATING SYSTEM: WINDOWS FOR WORKGROUPS
SOFTWARE: WORDDERFECT 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-9389-A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 302-892-8112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/0 FILING DATE: JUNE 15, 19 ATTORNEY/AGENT INFORMATION:
                                    CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: MICROSOFT WO CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188 GTCAAGGTGGCTACGGCGGTT 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182 TTTTGGGTGGATTAATTGGTT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122 TTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTG 181
                                                                                                                                                                                                                                                   STREET: 210 _______CITY: Cherry Hill
                                                                       APPLICATION NUMBER: FILING DATE: Herew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68 GTGGCCAGGGTGCAGGTGCTGCTGCTGCTGCTGCTGCTGCAGGTCAGGGTCGTC 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 GTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM: MICROSOFT WINDOWS 95
SOFTWARE: MICROSOFT WORD FOR WINDOWS 95
                    APPLICATION NUMBER:
                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: DISKETTE,
                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGATCTCAGGGCGCAGGTCAAGGTGCTGGTGCAGCTGCGGCGGCAGCTGGTGGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75;
                                                                                                                                                                                                                     08002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FLOYD, LINDA AXAMETHY
                                                                                                                                                                                                                                                                                      E: Jane Massey
210 Lake Drive
                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      302-773-0164
                                                                                                                                                                                                                                                                                                                                                                                                            James Eberwine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM PC COMPATIBLE
MBER: 08/294,133
August 22, 1994
                                                                                                                                                                               DISKETTE,
                                                                         Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                           A Method of Sequencing Proteins by
                                                                                                                                                                                                                                                                                                                                                                           Epitope Ordering and
                                                                                                                                                                                                                                                                                                                                                            Restriction Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/556,978B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08/077,600
                                                                                          PCT/US95/10668
                                                                                                                                                                               3.5 INCH, 1.44 Mb
                                                                                                                                                                                                                                                                                      Licata, Esq.
East, Suite 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 35.4; DB Pred. No. 0.043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4; Length 303;
                                                                                                                                                                                                                                                                                                                                                                             Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187
```

0,

Length 198; Indels

0;

```
APPLICATION NUMBER: PCT/US
FILING DATE: Herewith
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/294
ETLING DATE: August 22, 19
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Appart...
Sequence 4, Appart...
GENERAL INFORMATION:
GENERAL INFORMATION:
James Eberwine
The American Americ
                                                                                                                     NAME: Jane Massey Licata
REGISTRATION NUMBER: 32,257
REFERENCE/DOCKET NUMBER: PENN-0137
TELECOMMUNICATION INFORMATION:
TELEPHONE: (609) 779-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: A Method of Sequencing Proteins by TITLE OF INVENTION: Epitope Ordering and Protein Restriction Mapping
                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM 486
OPERATING SYSTEM: WINDOWS FOR WORKGROUPS
SOFTWARE: WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Jane Massey Licata, Esq. STREET: 210 Lake Drive East, Suite 201 STATE: NJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (609) 779-8488
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138 TGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAAT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 TGTTGTTGTTGTTGTTGTTGGAATTCTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78 TCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTT 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: PENN-0137
TELECOMMUNICATION INFORMATION:
TELEPHONE: (609) 779-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18 GCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAG 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Jane Massey Licata
REGISTRATION NUMBER: 32,257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application PC/TUS9510668
                                                                            779-8488
1779-8488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISKETTE, 3.5 INCH, 1.44 Mb STORAGE
                                                                                                                                                                                                                                                       08/294,133
t 22, 1994
                                                                                                                                                                                                                                                                                                                                                         PCT/US95/10668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.2%;
49.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 35.2; DB 5;
Pred. No. 0.04;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                APPLICATION UDATA:

APPLICATION UDATE: 04-APR-1991

PRIOR APPLICATION DATA: US 07/681,492

PRIOR APPLICATION DATA:

APPLICATION UMBER: WO PCT/EP90/01275

PRIOR APPLICATION DATA:

APPLICATION UMBER: EP 89 402 224.3

APPLICATION UMBER: EP 89 402 224.3

APTORNAY/AGENT INFORMATION:

NAME: SCHALIMAR, ROBET M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-08-361-467B-4/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                            REGISTRATION NUMBER: 31,196
REFERENCE/DOCKET NUMBER: 010830-027
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4,
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS: Single
TOPOLOGY: Linear
ANTI-SENSE: NO
PCT-US95-10668-4
                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/361,467B FILING DATE: 22-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC FF2 CLSK
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentTr Pari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: United
ZIP: 22313-1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 TGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 TGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAAT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65 TGTTGTTGTTGTTGTTGTTGGAATTCTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 TGTT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18 GCAAGGTAGTAGTCTAATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAG 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 49.5%; hes 91; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
TYPE: N
                                                                                                              Schulman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4, Application US/08361467B
5. 5633441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: BURNS, DOANE, SWECKER & MATHIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                United States
                                                                                                                                                                                                                                                                                                                                                                                                                                        PatentIn
(703) 836-66
03) 836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Van Montagu, Marc
VENTION: PLANTS WITH MODIFIED FLOWERS, SEEDS OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Van Emmelo, John
De Oliveria, Dulce E.
De Souza, Maria-Helena
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             De Greef, Willy
                                                                                                  Robert
                                                                                                                                                                                                                                                                                                                                                                                                                Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 35.2; DB 5;
Pred. No. 0.04;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
```

PCT-US95-10668-4/c

δÃ 멍

198

5 TGTT 2

δÃ Ъ Qγ 망

; TOPOLOGY:; ANTI-SENSE: PCT-US95-10668-3

TYPE: STRANDEDNESS: Sluy

Nucleic Acid DEDNESS: Single

LENGTH:

Query Match Best Local Sim Matches 91;

Similarity

TELEFAX: (6

(609)

CURRENT APPLICATION DATA:

COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT

COUNTRY:

.08002

USA

NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:

0

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
US-08-484-332C-4/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-361-467B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08484332C Patent No. 5767374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                             FILING DATE: 04-APR-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/EP90/01275
FILING DATE: 01-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMMEDIATE SOURCE:
CLONE: 3C9
                                ATTORNEY/AGENT INFORMATION: NAME: Schulman, Robert M
                                                                                                                                                                                              FILING DATE: 22-DEC-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/361,467
                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       204 TAAAATCGGTCAATCGATGG 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 TTTTGATGGGCTATAAGTGGGAGCCTTAGTTGGTGGTTTAACCGGTGGTTTAACTGGTGG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144 AGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         329 AGGAGCAGGATAAGGTGATGGTGTTGGTGGTGGTTTAACTGGTGGCTTAGCTGGTGG 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: P.U. CONTROL Alexandria
                                                              APPLICATION NUMBER: EP 89 FILING DATE: 04-AUG-1989
                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 04-AP
                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/O FILING DATE: 7-JUNE-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84 AGAAGTCGGAGCTGCGACTGGGGGCTGTTGGTGGCGGTGTTGGCAGCTGTTTGGTAA 143
                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                    SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTCGATGGGCTATAAGTGG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                   22313-1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                               Schulman, Robert M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1046 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P.O. Box 1404
                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Van Montagu, Marc
VENTION: PLANTS WITH MODIFIED FLOWERS, SEEDS OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Van Emmelo, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      De Souza, Maria-Helena
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    De Oliveria, Dulce E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      De Greef, Willy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BURNS, DOANE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.18;
52.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBRYOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                                                                                                                                               US 07/681,492
                                                                                                                                                                                                                                                                                               US/08/484,332C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SWECKER & MATHIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
010830-093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 34.4; DB Pred. No. 0.18;
                                                                               402 224.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-484-332C-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US95-10668-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application PC/TUS9510668 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (703) 836-20 INFORMATION FOR SEQ ID NO:
                                                                        TELEFAX: (609) 779-84 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                         APPLICATION NUMBER: 08/2 FILING DATE: August 22, ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                               SOFTWARE: WORDPERFECT CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IMMEDIATE SOURCE: CLONE: 3C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                       SEQUENCE CHARACTERISTICS:
                                                                                                              TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329 AGGAGCAGGATAAGGTGATGGTGTTTGGTGGTGGTTTAACTGGTGGCTTAGCTGGTGG 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209 TTTCGATGGGCTATAAGTGG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 AGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                     FILING DATE: H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                               REGISTRATION NUMBER: 32, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: WINDOWS FOR WORKGROUPS SOFTWARE: WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                           COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
 TOPOLOGY:
               STRANDEDNESS:
                                                                                                                                                                NAME:
                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAAATCGGTCAATCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTGATGGGCTATAAGTGGGAGCCTTAGTTGGTGGTTTAACCGGTGGTTTAACTGGTGG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity 52.9
74; Conservative
                                                                                                                                                                                                                                                                                                                                                                        08002
                                                                                                                                                                                                                                                                                                                                                                                                                Cherry Hill
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid
                          Nucleic Acid
                                                                                                                                                             Jane Massey Licata
                                                                                                                                                                                                                                                                                                                                                                                                     Z
                                                                                                                                                                                                                                                                                                                                                                                                                               3: Jane Massey Licata, Esq.
210 Lake Drive East, Suite 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1046 base pairs
                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     James Eberwine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                           IBM 486
Linear
                                                                                                     (609)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (703)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                         DISKETTE,
                                                                                                                                                                                                                                                   Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         double
                                                                                      779-8488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.1%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               836-6620
                                                                                                     779-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A Method of Sequencing Proteins by Epitope Ordering and Protein Restriction Mapping
                                                                                                                                                                                                                                                                  PCT/US95/10668
                                                                                                                                                                                           08/294,133
22, 1994
                                                                                                                                             32,257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                         3.5 INCH, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
                                                                                                                                  PENN-0137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 34.4; DB 1;
Pred. No. 0.18;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                           STORAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

Query Match

Best Local Similarity 48.ys

Matches 90; Conservative

6.98; 48.98;

Score 33.6; DB Pred. No. 0.13; Mismatches

DB 5; Length 198;

94;

Indels

,0

PCT-US95-10668-1

Вþ

u

TGTT 2

198 TGGT 201

В Ş 망 Ş DЪ

138 TGGTAAAGGTAGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGGTGGATTAAT 197

18 GCAAGGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAG 77

78 TCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGTT 137

65 TGTTGTTGTTGTTGTTGTTGGGATCCTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGT

```
Qy
                                                                                                     , ANTI-SENSE:
PCT-US95-10668-2
                                                          Matches
                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US95-10668-2/c
? Sequence 2, Application PC/TUS9510668
? GENERAL INFORMATION:
APPLICANT: James Eberwine
APPLICANT: James Eberwine
                                                                                                                                                                            TELEFAX: (6
INFORMATION FOR
                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 198
                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM 486
OPERATING SYSTEM: WINDOWN SOFTWARE: WORDPERFECT 5
CURRENT APPLICATION DATA:
18 GCAAGGTAGTAGTCTAATTAATCAGTGTGTTTTTAGTTGGCTGTGCCCAGAACTTTAG 77
                                                                                                                                                                                             TELEPHONE: (609) 779-2400
                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/294,133
FILING DATE: August 22, 1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                         STRANDEDNESS:
TOPOLOGY: Li
                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
                                                                                                                                                                                                                               NAME: Jane Massey Licata
REGISTRATION NUMBER: 32/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
FILING DATE: Herewi
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                         Nucleic Acid
                                                                                                                                                                                                                                                                                                                                                                                                         08002
                                                                                                                                                                                                                                                                                                                                                                                                                                    Cherry Hill
                                                                                                                                                                        (609) 779-841
FOR SEQ ID NO:
                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                Z
                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Jane Massey
210 Lake Drive
                                                                                                                       Linear
                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                      SYSTEM: WINDOWS FOR WORKGROUPS
                                                                                                                                                                                                                                                                                                                                                                  DISKETTE, 3.5 INCH, 1.44 Mb STORAGE
                                                                                                                                                                                                                                                                                                               Herewith
                                                                                                                                                                                      779-8488
                                                             48.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A Method of Sequencing Proteins
Epitope Ordering and Protein
Restriction Mapping
                                                                                                                                                                                                        32,257
PENN-0137
                                                                                                                                                                                                                                                                                                                    PCT/US95/10668
                                         ; Score 33.6; DB; Pred. No. 0.13; 0; Mismatches
                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                       Licata, Esq.
East, Suite 201
                                                               DB 5;
                                          94;
                                                           Length 198;
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δq
                                Gaps
                                0,
```

```
0,
                              Ъ
                                                 Qγ
                                                                         В
                                                                                               Qγ
                                                                                                                                                              CLONE:
US-08-825-781-2
                                                                                                                   Matches
                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
US-08-825-781-2
269 ATTCCACTGTCAGTTGCATTATCCTGTTTTGGTGGCCTCAATGCCTCCATTGTGGCTGCT 328
                   157 GTTGCAATGGCCATTGGTGGTGGTTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAA 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                            209 GCCAGTGATGCTGTTGCTGTGACTTTTGCAGATCAGATATTTGGAATATTTAACTGGATA 268
                                                                                                                                                                                          TOPOLOGY: linear
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08825781 Patent No. 5843727 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US
FILING DATE: Herewith
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Д
                                                                97 GCGACTGGGGCTGTTGTTGGCGGTGTTGCCTGGCCAGCTGTTTGGTTAAAGGTAGTGGTCGA 156
                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: PETELECOMMUNICATION INFORMATION: 15-855-0555
                                                                                                                             Local
                                                                                                                                                                  LIBRARY: PANCTUTO2
CLONE: 2236771
                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                         OPERMITING CONTROL OF WINDOWS CORRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                 TELEFAX: 415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 31/*
CITY: Palo Alto
TTATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Hillman,
APPLICANT: Shah, Pu
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                         NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749
                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: US
ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Incyte Pharmaceuticals, Inc
STREET: 3174 Porter Drive
                                                                                                          Similarity 54.0 68; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198 TGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 TGTT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78 TCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGTT
                                                                                                                                                                                                                            nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTGTTGTTGTTGTTGTTGGGATCCTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTTGGGTGGATTAAT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1011 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                  Herewith
ON: 514
                                                                                                                                                                                                              single
                                                                                                                    54.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purvi
                                                                                                                                                                                                                                                                                                                                                                                                                                  for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HUMAN TUMOR-ASSOCIATED MEMBRANE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jennifer L.
                                                                                                                                                                                                                                                           ي
                                                                                                         0;
                                                                                                 Score 33.2; DB 2;
Pred. No. 0.42;
0; Mismatches 58
                                                                                                                                                                                                                                                                                                             PF-0262 US
                                                                                                                    Length 1011;
                                                                                               Indels
                                                                                          0
```

٠,

Š

TCGATG

222

밁

217 329

TCTAGG

334

```
ð
                                                                                                                                                                                                                                                                                                            ; IMMEDIATE SOURCE:
; LIBRARY: ESOGTUT02
; CLONE: 2667831
US-09-073-362-2
RESULT 14
US-09-243-920-2
                                                                                        õ
                                                                                                                        밁
                                                                                                                                                                                   밁
                                                                                                                                                                                                                Š
                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
US-09-073-362-2
                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, App...
Sequence 2, App...
No. 5942399
                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 2072 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                   1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/073,362
                                                                                                                         1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: CETTONE, Michael C
REGISTRATION NUMBER: 39,132
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: COTTEY, Nº11 C.
TITLE OF INVENTION: AMINO ACID PERMEASE HONOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                        157 GTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTTGAATTGGTTCTAAAATCGGTCAA 216
                                                                                         217 TCGATG 222
                                                                                                                                                                                                   97 GCGACTGGGGCTGTTGGTGGCGGTGTTGGTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 3174 POI
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 650-845-4166
                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                        ATTCCACTGTCAGTTGCATTATCCTGTTTTGGTGGCCTCAATGCCTCCATTGTGGCTGCT 1134
                                                                                                                                                                                     GCCAGTGATGCTGTTGCTGTGACTTTTGCAGATCAGATATTTTGGAATATTTAACTGGATA 1074
                                                           TCTAGG
                                                                                                                                                                                                                                                  68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94304
                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/09073362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Incyte Pharmaceuticals, Inc. 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yue, Henry
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hillman,
                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Diskette
                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                             6.8%;
54.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Jennifer L.
                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF-0514 US
                                                                                                                                                                                                                                                             Score 33.2; DB Pred. No. 0.62;
                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                58;
                                                                                                                                                                                                                                                                           Length 2072;
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                0;
```

```
Вр
                                                                                                                                                                                                                                                                                                                 В
                                                                                                                 RESULT 15
US-08-332-766A-1
                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-243-920-2
                                                              Sequence 1, Application US/08332766A Patent No. 5843647 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/09243920 Patent No. 5981242 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              IMMEDIATE SOURCE:
LIBRARY: ESOGTUT02
CLONE: 2667831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Yue, Henry
APPLICANT: Corley, Neil C.
APPLICANT: NVENTION: ANINO
TITLE OF INVENTION: ANINO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Cerrone, Michael C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ for CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
TITLE OF INVENTION: SIMPLE TANDEM REPEATS NUMBER OF SEQUENCES: 125
                                 APPLICANT: JEFFREYS, Alec J. APPLICANT: ARMOUR, John
                                                                                                                                                                                   1135 TCTAGG 1140
                                                                                                                                                                                                                                                  1075 ATTCCACTGTCAGTTGCATTATCCTGTTTTGGTGGCCTCAATGCCTCCATTGTGGCTGCT 1134
                                                                                                                                                                                                                                                                                                               1015 GCCAGTGATGCTGTTGCTGTGACTTTTGCAGATCAGATATTTGGAATATTTAACTGGATA 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 2072 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                  217 TCGATG
                                                                                                                                                                                                                                                                                 157 GTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAA 216
                                                                                                                                                                                                                                                                                                                                  97 GCGACTGGGGCTGTTGGTTGGCGGTGTTGGTGGCCAGCTGTTTTGGTAAAGGTAGTGGTCGA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/09/243,920 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: US
ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 3174 Por
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 39, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3174 Porter Drive
                                                                                                                                                                                                                  222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hillman,
                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                               6.8%;
54.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMINO ACID PERMEASE HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOS
for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09/073,362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39,132
FR: PF-0514 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C
                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                               Score 33.2; DB Pred. No. 0.62;
                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.0
                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                                                                                                                                                 58;
                                                                                                                                                                                                                                                                                                                                                                                                                Length 2072;
                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

0

CORRESPONDENCE ADDRESS

```
STATE: D. C.
COUNTRY: U.S.A.
ZIP: 20005-3918
COUNTRY: 20005-3918
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION NUMBER: US/08/332,766A
FILING DATE: 01-NOV-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9326052.9
FILING DATE: 01-NOV-1994
PRIOR APPLICATION NUMBER: 25,323
FILING DATE: 1-DEC-1993
ANAME: BIRD, Donald J.
REFERENCE/DOCKET NUMBER: 25,323
TELECOMMUNICATION INFORMATION:
REFERENCE/DOCKET NUMBER: 217211/M94/0434/GB
TELEPHONE: (202) 861-3000
TELEPAX: (202) 861-3000
TELEPAX: (202) 861-3000
SEQUENCE CHARACTERISTICS: TYPE: DASC PAIRS
SEQUENCE CHARACTERISTICS: TYPE: DASC PAIRS
SINGLE SINGLE
MOLECULE TYPE: DNA (genomic)

C DASC CORP. 33: DB 2: Le.
Search completed: October 27, 2002, 18:37:15
Job time : 44.5337 secs
                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 53.5%; Pred. No. 0.29;
Matches 69; Conservative 0; Mismatches 60; Indels
                                                                              186 TGGTGGTGA 194
                                                                                                     198 TGGTTCTAA 206
                                                                                                                 138 TGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAAT 197
                                                                                                                                                                                      66 TCCTCCTGATAACAATGGTGATGATGATGGTGATGGTGGTGGTGATGGTGATGTTGG 125
                                                                                                                                                                                                         78 TCGTCAAGAAGTCGGAGCTGCGACTGGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTT 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: CUSHMAN DARBY & CUSHMAN, L.L.P. STREET: 1100 New York Avenue, N.W. STATE: D.C.
```

0,

₽ γo ДЬ οy Д

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                             a a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
2:
                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                             Score
                                                                486
295
295
73.2
71.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length:
length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N_Geneseq_032802:*
1: /SIDS1/gcgdata/gc
2: /SIDS1/gcgdata/gc
3: /SIDS1/gcgdata/gc
4: /SIDS1/gcgdata/gc
5: /SIDS1/gcgdata/gc
5: /SIDS1/gcgdata/gc
6: /SIDS1/gcgdata/gc
6: /SIDS1/gcgdata/gc
8: /SIDS1/gcgdata/gc
8: /SIDS1/gcgdata/gc
9: /SIDS1/gcgdata/gc
                                                                                                                                                                                                Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-677-374-1
486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
    100.0
100.0
60.7
60.7
15.1
14.2
14.2
12.8
11.6
                                                                                                                                                                                                                                                                                                                                                                                               110:
111:
113:
114:
115:
116:
117:
119:
119:
120:
221:
221:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           October 27, 2002, 14:35:03;
                                                                                                                                                                                                                                                                                                                                                                                    SIDSI/gcgdata/geneseq/geneseqn-embl/NA198. DAT: *
SIDSI/gcgdata/geneseq/geneseqn-embl/NA199. DAT: *
SIDSI/gcgdata/geneseq/geneseqn-embl/NA2000. DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atgaacagaggatgtttgca.....aagtcatttcaacagaaaaa 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                             Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000000000
    486
489
483
768
110
118
102
454
      222222222
                   AAF86246
AAH79040
AAF86247
AAF86248
AAF86252
AAF86254
AAF86255
AAF86255
                                                                                                                                                                                                             U
                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Search time 123.389 Seconds
(without alignments)
6762.541 Million cell updates
OspA 17kD antigen
Piscirickettsia sa
DNA sequence of E.
DNA sequence of cl
PCR primer #2 used
PCR primer #4 used
PCR primer #5 used
PCR primer #5 used
PCR primer #5 used
                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 1
AAF86246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.0
                                                                                                                                                                                                                                                                                          CDS
                       17-SEP-1999;
                                                                17-SEP-1999;
                                                                                                         17-MAR-2001
                                                                                                                                             CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                      Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86246;
```

45	44		2	41	40	39	38	37	36	35	34	3 3	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
38.8	38.8	38.8	38.8	39	39	39	39	39	39	39	39	39	39	39	39	39	39	9		9	9	9	9	9	9	9	9	9		0	42.6	42.6	44	44	46.8
8.0	8.0													8.0	8.0													٠			٠		9.1		
887	887	887	887	8045	801	600	600	600	600	600	600	350	350	350	350	350	350	1395	522	522	522	522	522	522	522	522	2292	2226	5162	1509	850	790	2309	309	110
22	22	22	22	21	23	22	22	22	22	22	22	22	22	22	22	22	22	23	22	22	22	22	22	22	22	22	21	23	23	ω		11	23	23	22
AAK17542	ABA36164	ABA69248	ABA51240	AAA65171	AAS67681	AAI39552	AAI16547	AAK33826	AAK07956	ABA28224	ABA59687	AAI52634	AAI25744	AAK46795	AAK20651	ABA38104	ABA72229	AAS89524	AAI08110	AAI47715	AAI22424	AAK41670	AAK15928	ABA34580	ABA67501	ABA49593	AAC45883	AAS78586	ABL20278	27	AAN80227	AAQ03870	ABL13298	ABL13299	AAF86256
Human brain expres	Probe #14630 for g	۳	Human breast cell	Neurospora crassa	DNA encoding novel		Probe #6480 for ge		brain	#6690 f	foetal	#21320 used	#1567	Human bone marrow	Human brain expres	#16570 for	n foetal live	ncoding	#8101 u	#16401 used	#1235	bone n	brain expre	#13046	foetal	c	Arabidopsis thalia	g nove			Sequence of Haemop			mе	PCR primer #6 used

ALIGNMENTS

```
RESULT 1
AAF86246
ID AAF86246;
XX AAF86246;
XX AAF86246;
XX DT 11-JUL-2001 (first entry)
XX Vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease;
XX Vaccine; OspA; Salmonid rickettsial septicaemia; rickett
```

```
RESULT 2
AAH79040
ID `AAH79040 standard;
                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                  γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481 GAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                             481
                                                                                                                           421
                                                                                                                                              361
                                                                                                                                                                  361
                                                                                                                                                                                      301
                                                                                                                                                                                                     241 AAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                                                                                                                                                                              241 AAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA 300
                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals particularly poikilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial pathogen sequence represents DNA encoding the p. salmonis of a protein with an N-terminal fusion partner is used in a vaccine to create an anti-ospA antibody response.
                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 486 BP; 137 A; 79 C; 144 G; 126 T; 0 other;
                                                       GAAAAA 486
                                                                            CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                      CAAGAGATTTACGGCACTGCATGCCGGCAACGGGATGGTCGTTGGCAAGTCATTTCAACA 480
                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                              GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                                                                       GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 2B;
                                                                                                                                                                                                                                          _
                                                                                                                                                                                                                                                                                     GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                               GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGCT 180
                                                                                                                                                                                                                                                                                                                             TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT
                                                                                                                                                                                                                                                                                                                                       TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                 (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                     ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                     486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ) KAY W W.
) BURIAN J.
) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                              ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 486;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                      red. No. 3.1
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                ; DB 22; Length 3.1e-137;
                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     486;
                                                                                                                                          420
                                                                                                                                                              360
                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                     Qy
                                                          Ъ
                                                                            Qy
                                                                                                   Дb
                                                                                                                    QV
                                                                                                                                           밁
                                                                                                                                                            Qy
```

Вb δÃ Дb Ş DЪ δõ В δÃ Ъ Qy В δĀ В

CDNA;

```
Ъ
                                        Qγ
                                                            B
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                           Query Match
                      241
                                        241
                                                          181
                                                                                               121
                                                                                                                                                                                                                                        The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity to known as salmonid rickettsial septicaemia.
                                                                            181
                                                                                                                 121
                                                                                                                                                                                                                              Sequence 489 BP; 139 A; 79 C; 144 G; 127 T; 0 other;
                                                                                                                                  61
                                                                                                                                                                                                                                                                                                           Claim 3; Fig 4; 25pp; English.
                                                                                                                                                                                                                                                                                                                      New nucleic acids encoding an amino acid sequence homologous to surface antigen present on Piscirickettsia salmonis are useful t
                                                                                                                                                    61
1 ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGC 60
                                                                                                                                                                                                                                                                                                                                                                                                               Simard
                                                                                                                                                                                                                                                                                                                                                                                                                                           11-MAR-2000; 2000GB-0005B3B.
01-JUL-2000; 2000GB-0015080.
01-JUL-2000; 2000GB-0016082.
29-JUL-2000; 2000GB-0018599.
                                   GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                      Burzio
                                              GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                         (AQUA-) AQUA HEALTH EURO LTD.
                                                                        GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT
                                                                                  GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT
                                                                                                             TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT
                                                                                                                     TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAACTGCGACTGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200168865-A2.
                                                                                                                                                 ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTTAGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Piscirickettsia salmonis; piscirickettsiosis; salmonid rickettsial; septicaemia; SRS; surface antigen; vaccine; antibacterial; fish;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Piscirickettsia salmonis polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JAN-2002
                                                                                                                                                                                                         486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ААН79040;
                                                                                                                                                                                                                                                                                                                                                                      2001-639050/73.
DB; AAG78025.
                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                     Ľ, z
                                                                                                                                                                                                   100.0%; Score 486; DB 22; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-GB01055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                           Η,
                                                                                                                                                                                                                                                                                                                                                                                                      Jones S,
                                                                                                                                                                                                  0,
                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                  Griffiths
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P10.6
                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                          Length 489;
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                              Valenzuela
                  300
                                                                                                                                                                                                                                                                                                                              ç
                                     240
                                                      240
                                                                        180
                                                                                            180
                                                                                                                                                                                    0
```

```
RESULT 3
AAF86247
   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                      Poikilothermic vaccine; OspA; : SRS; 17E2; ds.
This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animal; particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid
                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                    CDS
                                                                                       vaccine
                                                                                                septicaemia
                                                                                                                                                   Kay WW.
                                                                                                                                                                   (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                       17-MAR-2001
                                                                                                                                                                                                                                                        CA2281913-A1
                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                         DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                         11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86247
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86247 standard;
                                                                      Example
                                                                                                        Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                         2001-316844/34
)B; AAB81127.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAG
                                                                                      for protecting poikilothermic fish against salmonid rickettsial aemia and other rickettsial diseases comprises administering a containing the OspA protein of Piscirickettsia salmonis
                                                                      <u>ω</u>
                                                                                                                                                  Burian
                                                                      Fig 4C;
                                                                                                                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                              fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                      99CA-2281913
                                                                                                                                                 'n,
                                                                                                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                         Ħ
                                                                                                                                                                                                                                                                                                                                                     salmonis
                                                                                                                                                                                                                                                                       /partial
/product= "ospA"
/note= "Genus specific 17kDa antigen,
/note= not include a stop codon"
                                                                                                                                                                                                                                                                                                            /*tag=
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                      35pp; English
                                                                                                                                                                                                                                                                                                                                                                                                        coli optimised
                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                  Kuzyk
                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                           483
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                       ospA gene 17E2
                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                                                                                                                                                              disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                  does
                            of a
                                                                                                                                                                                                                             RESULT 4
AAF86248
   Ş
                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best
                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              œ
```

```
8888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                     vaccine; Os
SRS; 17E2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rickettsial septicaemia (SRS) and other rickettsial diseases. The sequence represents DNA which has been optimised for expression i Escherichia coli to encode the P. salmonis OspA protein. An OspA with an N-terminal fusion partner is used in a vaccine to create anti-OspA antibody response.
               misc_feature
                                                         misc_feature
                                                                                                                                                                          Synthetic.
                                                                                                                                                                                         Piscirickettsia
                                                                                                                                                                                                                                    Poikilothermic fish; Piscirickettsia salmonis; vaccine; OspA; salmonid rickettsial septicaemi
                                                                                                                                                                                                                                                                                                           11-JUL-2001
                                                                                                                                                                                                                                                                                                                                          AAF86248
                                                                                                                                                                                                                                                                                                                                                                     AAF86248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                             425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match
                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGATGTTTGCAAGGTAGTAGTCTAATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCAGAGTTTGGAAAAGGTAAAAGCAGGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGTCTGACTTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGATTAATTGGTTCTAAAATCGGTCAATCGGTGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCCATGATCGCAGGTCAGAAACAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAACTTCAGCCGCCAGGAAGTTGGCGCCGCCGCCACCGGTGCGGTGTTGTGGGCGGTGTTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            483
                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                      fusion construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP;
                                                                                                                                                                                                                                                                              of c17e2 ospA
                                                                                                                                                                                                                                                                                                          (first entry)
/note= "I
286..768
/*tag= 0
                                                                                                                                                                                           salmonis
                                                                                   /partial
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            108
                                                           1..285
                                                                         /note-
                                                                                                                                               Location/Qualifiers
                                            /*tag=
                                                                                                                   /*tag=
                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.7%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; 127 C; 148
                              "DNA
                                                                         No
O
                                               ٥
                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                     768
                                                                                                                                                                                                                                    rickettsial septicaemia; rickettsial
                                                                       "C17E2
o stop c
                                                                                                                                                                                                                                                                              construct with N-terminal fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                            encoding
                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                      ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                       2 OspA
codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295;
No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G; 100 T;
                              undefined N-terminal
                                                                       with N-terminal is given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 22;
.3e-79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                   rickettsial pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                        fusion
                              fusion
                                                                                                                                                                                                                                                                              partner.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                      partner"
                                                                                                                                                                                                                                       disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                              partner'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
ρ
                                                                                                                                                                                                                                                                                    БР
                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                  ~ 428
                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                              This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, piscirickettsia salmonis. The method comprises administering an immunogenic amount of p. salmonis specific antigen termed OspA, or an immunogenic amount of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The presents P. salmonis OspA DNA termed C17E2 optimised for expression in Escherichia coli fused to DNA encoding an undefined is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                     530
                                                                                                                                        248
                                                                                                                                                             470
                                                                                                                                                                                188
                                                                                                                                                                                                     410
                                                                                                                                                                                                                        128
                                                                                                                                                                                                                          350 AGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGGGGGTTGTGGGCGGTGTTGCCG
                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                  Local
TTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                     GTCAGCAGTACTGCGGGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA
                                 ထ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-SEP-1999;
                                                                        GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA2281913-A1.
                                                             GTAACAGCTACTCTGTGGAACCGGTTCGCCACCTACCAGCGTTACAACAACAGGAACGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-MAR-2001.
                                                                                                    ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                  ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                           GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA
                                                                                                                                                       GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA 247
                                                                                                                                                                                   GCCAGCTGTTCGGTAAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                      AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                                                                                                                                                                                                                              GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                 GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCC 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-316844/34
                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Fig 5; 35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB81128.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Burian J,
                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                   220 A; 183 C; 190 G; 175 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
                                                                                                                                                                                                                                                                                                                            60.7%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Optimised OspA construct c17E2"
                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M
                                                                                                                                                                                                                                                                                                                        Score 295; DB 22;
Pred. No. 2.8e-79;
                                                                                                                                                                                                                                                                                                           Pred. No. 2.8e.
0; Mismatches
                                                                                                                                                                                                                                                                                                               115;
                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                               768;
                                                                                                                                                                                                                                                                                                           0;
                                                             649
                                                                                367
                                                                                                                        307
                                                                                                                                                                                                       187
                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                         0;
                                                       В
                                                                         QУ
                                                                                              В
                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
```

δÃ Дb δõ ф δÃ В γo DЪ δÃ DЪ VQ. Дb

ВP

```
RESULT 6
RAF86254/C
ID AAF86254 standard; DNA; 118
XX
                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
AAF86252
                                                                                                                                                                                                                                                                                                   This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an Immunogenic amount of a post in the form of a vaccine. The method is used for protecting animals, Piscirickarly poikilothermic fish, against the bacterial pathogen Piscirickarly postionermic fish, against the bacterial pathogen Piscirickarly postionermic fish, against the bacterial pathogen prickettsial septicaemia (SRS) and other rickettsial diseases. The present the Piscirickarls a PCR primer used in the cloning and optimisation of sequence represents a PCR primer used in the cloning and optimisation of invention.
                                                                                                                          116
                                                                                                                                                                                                                                                                             Sequence 110 BP; 13 A;
                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                     56
                                                                                                                                                                                                                                     Local
                                                                                                                                                        -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Poikilothermic vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCR primer #2 used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAF86252 standard;
                                                                                       GCGGTGTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATG
                                                                    GCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGGCGATG
                                                                                                                               TGGGTTGCGCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCCGTTGTGG
                                                                                                                                                 TIGGCTGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTG 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             710
                                                                                                                                                                                                                1 Similarity
87; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ) KAY W W.
) BURIAN J.
) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burian J,
                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fish; Piscirickettsia salmonis; rickettsial salmonid rickettsial septicaemia; rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              salmonis
                                                                                                                                                                                                                          15.1%;
79.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 construct; PCR primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in cloning an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                                                                                                                                           28 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MA;
                                                                                                                                                                                                            0;
                                                                                                                                                                                                                          Score 73.2;
Pred. No. 1
                                                                                                                                                                                                       Pred. No. 1.9e
); Mismatches
                                                                                                                                                                                                                                                                  45 G; 24 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  optimisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       septicaemia;
imer; ss.
                                                                                                                                                                                                                       DB 22;
..9e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of OspA gene
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rickettsial
                                                                                                     165
                                                                                                                                                                                                                               110;
                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pathogen;
al disease;
                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     768
                                                                                                                                                                                              0,
```

```
AAF8625/c
ID AAF862
XX AAF862
                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Poikilothermic f
vaccine; OspA; s
SRS; 17E2; fusic
                                                                                                                                                                                                                                                                                                                                                                                                                               salmonis. The method comprises administering an immunogenic amount of a selmonis specific antigen termed ospa, or an immunogenic fragment of Ospa in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis Ospa gene. The Ospa gene is used in the method of the
Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CA2281913-A1
                                                                                                                                    AAF86255 standard; DNA; 102
                                                                                                                                                                                                                                                                                                                                                                                           Sequence 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Piscirickettsia
                                              PCR primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCR primer #4 used in cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86254;
                                                                                                                                                                                                                                          271
                                                                                                                                                                                                                                                                                                    211 GGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAAAAGGTAAAA 270
                                                                                                                                                                                                                58
                                                                                                                                                                                                                                                                      GGTCAGAGCATGGACCAGCAGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAA 59
                                                                                                                                                                                                                            GCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGTGTTGAGC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-316844/34.
                                                                                                                                                                                                              GCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KAY W W.
BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Burian J,
                                           #5 used in cloning an optimisation of OspA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fusion construct;
                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                           BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fish; Piscirickettsia salmonis; rickettsial pathogen;
salmonid rickettsial septicaemia; rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        salmonis
                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                               14.78;
75.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                         32 C;
                                                                                                                                                                                                                                                                                                                                Pred. No. 5.9e

O; Mismatches
                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                         28 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               optimisation
                                                                                                                                                                                                                                                                                                                                                                                            37
                                                                                                                                                                                                                                                                                                                                                                                           Τ;
                                                                                                                                                                                                                                                                                                                                              DB 22;
5.9e-12;
                                                                                                                                                                                                                                                                                                                                                                                            0 other;
                                                                                                                                                                                                                                                                                                                                   29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of OspA gene
                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                             Length 118;
                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                0;
```

Qy 밁 QУ

밁

7

```
RRESULT 8
AAF86253
ID AAF86
XX AAF86
XX AAF86
XX AAF86
XX AAF86
XX POLK
XX POLK
XX POLK
XX VACC
XX VACC
XX PLSC
XX PLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                      Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF86253 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                         Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         397 AAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            337 ACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAA 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17E2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTACCAGCGTTACAACAACAGGAACGCCGTCAGCAGTACTGCCGCGAATTTCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102 BP; 14 A; 23 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>#</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fig 4B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fusion construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                     in cloning an optimisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 69; DB 22; Pred. No. 3.4e-11; Tematches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30 G; 35 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCR primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             of OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

17-SEP-1999;

99CA-2281913

```
RESULT 9
AAZ06832
                      W09942479-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                Rickettsia helvetica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                        diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                Rickettsia 17 kD outer membrane protein DNA.
                                                                                                                                                                                                                                                                                          Bacteria;
                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                            AAZ06832;
                                                                                                                                                                                                                                                                                                                                                                                                               AAZ06832 standard; DNA; 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202 TCTAAAATCGGTCAATCGATGGATCAGCAGGATA 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Salmonis. The method comprises administering an immunogenic amount of a P. Salmonis specific antigen termed OspA, or an immunogenic amount of a particularly poikilothermic fish, against the bacterial pathogen animals, rickettsial septicaemia (SRS) and other rickettsial septicaemia (SRS) and other rickettsial diseases. The present should be proposed in the cloning and optimisation of the present should be present should
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 94 BP; 18 A; 20 C; 35 G; 21 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 TCTAAAATCGGTCAGAGCATGGACCAGCAGGATA 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 AAAGGCTCTGGTCGTGTGGCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering vaccine containing the OspA protein of Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-SEP-1999;
                                                                                                                                                                                                                          intracellular; parasite; outer membrane protein; OMP; vaccine;
i immune response; antigen; peptide; tick; spotted fever; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burian J, Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                 /product= "17 kD outer membrane protein"
/note= "Stop codon not given in specification"
                                                              /product-
                                                                                                                                                              /*tag=
                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                   [partia]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913
                                                                               0
                                                                                                                                                                ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12.8%;
78.7%;
                "28 amino acid antigenic peptide from
17 kD OMP"
                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 4.3e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 62; I
Pred. No. 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .3e-09;
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
В
                            Qy
                                                                DЬ
                                                                                              Qy
                                                                                                                                  В
                                                                                                                                                                δÃ
                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                Matches
                            382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-AUG-1999.
```

밁

Дb Q

```
Rickettsia helvetica 17 kD outer membrane protein (OMP) and includes the sequence encoding a 28 amino acid antigenic peptide (ANY33732). This case quence was isolated from total DNA from the tick ixodes ricinus using CC amember of the spotted fever group (SFG) of the Rickettsia helvetica is crossly related, species and are transmitted to humans via ticks and commans. The Rickettsiae found in Ixodes ricinus ticks and commans. The Rickettsiae found in Ixodes ricinus ticks and commans. The Rickettsiae found in Ixodes ricinus ticks are pathogen-specific symptoms. However, the symptoms of rickettsiaes of Rickettsiae are associated with structures exposed to the surface of the Organism. Lipopolysacharides (LPS) have been used in the surface of the Organism. Lipopolysacharides (LPS) have been used the peptide can be used in immunoassays to detect infection, but its samples. It can also be used in vaccines to protect against, or treat, or rickettsiosis.
442 TGCCGGCAACCGG
                 382 CGTGÁGTACACTCAAACAGTTGTAATAGGCGGAAAACAACAAAAAGCATACGGTAATGCA
                                                                                                                                   322 GTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT
                                                                                                                                                                                                                262 AAGGTAAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT
                                                                                                                                                                                                                                                     205 GGGCAAATCGTTGCAGGTATGGATGAGCAGGATAGAAGACTTGCAGAGCTTACCTCACAG
                                                                                                                                                                                                                                                                             202 TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA 261
                                                                                                                                                                                                                                                                                                                               145 AAAGGTAAAGGGCAACTTGTCGGAGTAGGTGTAAGGTGCATTACTTGGAGCAGTTCTTGGC
                                                                                                                                                                                                                                                                                                                                                                  142 AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 454 BP; 138 A; 84 C; 117 G; 115 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                             82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGTTTGGT 141
                                                    CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                              GGCAATTACGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
les 182; Conserv
                                                                                                                                                                          AGAGCTTTAGAAGC---AGCTCCTAGCGGTAGTAACGTAGAGTGGCGTAATCCGGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 3; Page 16; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New peptide from outer membrane protein of Rickettsia helvetica used to diagnose rickettsiosis and in vaccines
                                                                                                                                                                                                                                                                                                                                                                                                          CAAGGTACAGGAACACTTCTTGGCGGTGCCGGGGGGTGCATTACTTGGTTCTCAATTTGGT 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-527454/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nilsson K, Pahlson C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (NILS/) NILSSON K.
(PAHL/) PAHLSON C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98SE-0000504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-SE00230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11.6%;
48.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 56.2; DB 20; Length a
Pred. No. 5e-07;
0; Mismatches 188; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         454;
```

В

442 TGCCGCCAACCTG

454

```
RESULT 10
AAR86256/c
ID AAR86256/c
ID AAR862
XX POINI
KW POINI
KW Vaccin
KW Vaccin
XX Piscir
XX Piscir
XX CA2281
XX I7-SEF
XX IRIV
PA (KUZY/
PA (K
RESULT 11
ABL13299/c
ID ABL13299 :
XX
AC ABL13299;
                                                                                                                                           밁
                                                                                                                                                                           Ş
                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                           This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of ospA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the p. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                        Sequence 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCR primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAF86256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF86256 standard; DNA; 110 BP
                                                                                                                                                                                                                                                                    413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KAYW/)
                                                                                                                                                                                                                            110
                                                                                                                                                                                   473
                                                                                                                                             50
                                                                                                                                                                                                                                                 GGCAGAAGCAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCA 472
                                                                                                                                                                  TTTCAACAGAAAAA 486
                                                                                                                                                                                                                            GTCAGAAACAGGAAATCTACGGCACCGCGTGCCGTCAGCCGGATGGCCGCTGGCAGGTGA 51
                                                                                                                                             TTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                        l Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) KAY W W.
) BURIAN J.
) KUZYK M A
                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fig 4B; 35pp;
                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                      B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             salmonis
                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                           37
                                                                                                                                                                                                                                                                                                                                                                                      A; 34 C;
                                                                                                                                                                                                                                                                                                                         9.6%;
77.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cloning an
                                          309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                        Score 46.8; DB 22;
Pred. No. 0.00019;
0; Mismatches 17;
                                                                                                                                                                                                                                                                                                                                                                                        27 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   optimisation
                                                                                                                                                                                                                                                                                                                                                                                      32 T;
                                                                                                                                                                                                                                                                                                                                                                                      0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of OspA
                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                110;
                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                               g
```

```
RESULT 12
ABL13298
ID ABL13
XX
AC ABL13
XX
DT 26-MA
DT 26-MA
XX
DF Drosc
XX
DF Drosc
XX
DF Drosc
XX
Drosc
                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventiuseful in developmental biology and in elucidating cell signalling a cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLI016176-ABL30511), expressed DNA sequences (ABLI01840-ABL16175) and the encoded proteins (ABB7377-ABB72072).
                            Drosophila; developmental biology; cell signalling; pharmaceutical; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster
                                                                                                                                                      ABL13298
                                                                                                                                                                                      ABL13298 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; ABB69196.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster expressed
                                                                                                                     26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       interactions
                                                                                                                                                                                                                                                                                                          148
                                                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                           88
                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                           AGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTTC
                                                                                                                                                                                                                                                                                                                                                             GTCGGAGCTGCGACTGTGTTGTTGGCGGTGTTTGCTGGCCAGCTGTTTGGTAAAGGT 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-656860/75
                                                                                                                                                                                                                                                                        from Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JC,
                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
71; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 34379; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309
                                                                                   melanogaster expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   developmental biology; cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP;
                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               108 A; 113 C; 65 G; 23 T; 0 other;
                                                                                                                                                                                      CDNA; 2309
                                                                                                                                                                                                                                                                                                                                                                                                                           9.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            , awa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                           Score 44; DB 23;
Pred. No. 0.0021;
0; Mismatches 4
                                                                                                                                                                                      ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Myers
                                                                                 polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EW
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                               45;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 309
                                                                                   SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ
                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                   insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        insecticide;
                                                                                   ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĕ
                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1000 or more and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                          203
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                             137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
```

is

0

Drosophila melanogaster

27-SEP-2001 W0200171042-A2.

```
RESULT 13
AAQ03870
                                                          22-MAR-1990.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9002557-A.
                                                                                                                                                                                         Key
CDS
                                                                                                                                                                                                                                      outer membrane proteins; pBOMP-2; active immunisation; typable H influenzae; non-typable H influenzae; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                             H.influenzae DNA fragment containing the PBOMP-2 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                       31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ03870;
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ03870 standard; DNA; 790 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1174 Gériceracrecerecrereres serécrecrecrecrecre de la conservación de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 AGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTTGGGTGGATTAATTGGTTC 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2309 BP; 561 A; 405 C; 526 G; 817 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention insectic cell in developmental biology and in elucidating cell signalling insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), expressed DNA (ABB57737-ABB72072). ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88 GTCGGAGCTGCAGCTGGTGTTGGTTGGCGGGTGTTGCTGGCCAGCTGTTTGGTAAAGGT 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ ID NO 34376; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity les 71; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New isolated nucleic acid
genes from Drosophila and
interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-656860/75.
P-PSDB; ABB69195.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                              influenzae.
                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                    /product=PBOMP-2, outer membrane protein of H.influenzae.
                                                                                                                                                              Location/Qualifiers
164..628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.1%;
61.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 23; LC., 0.0052; 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2309;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LS
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VΩ
                                                                                                                                                                                                                                                              Key
CDS
```

В Ş DЬ

```
RESULT 14
AAN80227
ID AAN80
                     11-DEC-1987;
02-MAR-1987;
31-DEC-1986;
(PRAX-) PRAXIS BIOLOGICS IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23-DEC-1987;
                                                                           14-JUL-1988.
                                                                                            W08804932-A
                                                                                                                                            Haemophilus influenzae.
                                                                                                                                                            Vaccine; diagnosis; epitope;
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                  Sequence of Haemophilus influenzae Praxis Biolgics Outer
Membrane Protein-2 (PBOMP-2) gene.
                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                              12-JAN-1991
                                                                                                                                                                                                                                   AAN80227;
                                                                                                                                                                                                                                          AAN80227 standard; DNA; 850 BP
                                                                                                                                                                                                                                                                                 454 AGCTGGAAGTAAAATCGAAGAAAAATGAGTCA 486
                                                                                                                                                                                                                                                                                                 195 AATTGGTTCTAAAATCGGTCAATCGATGGATCA 227
                                                                                                                                                                                                                                                                                                          394 AATTGGCGGTGGTCGTGGTCAAGCTATTGCAGCAGTAGTTGGTGCAATTGGCGGTGCAAT 453
                                                                                                                                                                                                                                                                                                                    135 GTTTGGTAAAGGTAGTGGTGGAGTTGCAATGGCCATTGGTGGTGGTGTTTTGGGTGGATT 194
                                                                                                                                                                                                                                                                                                                                             334 TAATCAAGGTÖTÄGTTGGTACGCTTGGTGGTGGAGCTTTAGGTGGTATTGCTGGTAGTAC 393
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 790 BP; 240 A; 106 C; 176 G; 266 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  The sequence is a 789bp BstEll-xmnl fragment of pAAl30.The predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                 coding region is given above.
See also AAQ03869,R03948 and AAR03949.
                                                                                                                                                                                                                                                                                                                                                         75 TAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Fig 14; 164pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer membrane protein epitopes of Haemophilus influenzae. used in
                                                                                                                                                                                                                                                                                                                                                                                                Mu
Local Way,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1990-115815/15.
P-PSDB; AAR05799.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Anilionis A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (PRAX-) PRAXIS BIOLOGICS IN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                 87US-0132073.
87US-0020849.
86US-0948364.
                                                                                                                                                                                                         (first entry)
                                                  87WO-US03423
                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                          /*tag=
                                                                                                                Location/Qualifiers
164..628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seid RC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88US-0239572.
89US-0396572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89WO-US03779.
                                                                                                                                                                                                                                                                                                                                                                                                          8.8%;
                                                                                                                                                   passive immunisation; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Deich RA,
                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                     Score 42.6;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2lotnick GW,
                                                                                                                                                                                                                                                                                                                                                                                     J.0085;
69;
                                                                                                                                                                                                                                                                                                                                                                                                    _DB_11; Length 790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
```

0,

```
RESULT 15
ABL20279/c
ID ABL20279;
XX
AC ABL20279;
XX
DT 26-MAR-2002 (first entry)
XX
DE Drosophila melanogaster genomic
XX
Drosophila melanogaster.
XX
Drosophila melanogaster.
XX
Drosophila melanogaster.
XX
OS Drosophila melanogaster.
XX
PN W0200171042-A2.
XX
PD 27-SEP-2001.
XX
PP 23-MAR-2000; 2000W0-US09231.
XX
PF 23-MAR-2000; 2000US-0614150.
XX
PR 11-JUL-2000; 2000US-0614150.
XX
PA (PEKE) PE CORP NY.
XX
PI Venter JC, Adams M, Li PWD,
XX
PA (PEKE) PE CORP NY.
XX
PE (PEKE) PE (PEKE) PE CORP NY.
XX
PE (PEKE) PE (PEKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A pure antigenic peptide or protein related to an epitope of Haemophilus influenzae is claimed. Also claimed is a recombinant vector comprising a DNA sequence coding for an antigenic determinant of an Haemophilus influenzae outer membrane protein, the transformed cell, a subunit vaccine in a pharmaceutical carrier, a method of immunising humans and an assay for Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pure peptide related to epitope of used as immunogens in vaccines and passive immunisation and assays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 850 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 14; 129pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Deich RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGGAAGTAAAATCGAAGAAAAAATGAGTCA 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTTGGGTGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1988-205305/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGGTTCTAAAATCGGTCAATCGATGGATCA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGGCGGTGGTCGAGCTATTGCAGCAGTAGTTGGTGCAATTTGGCGGTGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAP80667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       melanogaster genomic polynucleotide SEQ ID NO 12310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zlotnick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          254 A; 116 C; 190 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.8%;
54.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               biology;
                                                                                            detection reagent for for elucidating cell s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 42.6; DB 9
Pred. No. 0.0088;
0; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                 Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haemophilus influenzae - for producing antibodies
                                                                                                                                                                                                                                                 Ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69;
                                                                                                r detecting 
signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  insecticide;
                                                                                                1000
and (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                   0 or more cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

rch completed: October time: 127.389 secs

27,

16:40:39

21pp + Sequence Listing; English

Q 밁 Q 망 Q

В

```
δÃ
                            Ş
                                                                밁
                                                                                                                                   망
                                                                                                                                                                  δÃ
                                                                                                                                                                                                        дb
                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                  X S S S S S S S S S S S X X
멍
                                                                                                                                                                                                                                                                            Matches 107;
                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL11816176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                             at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                               The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                Sequence
 805
                                                                  865
                                                                                                                                     925
                                188
                                                                                                    128
                                                                                                                                                                                                        985 GTGGTTCTGTTGGTGGTTCTGTTGGAGGTTCTGTTGGTGGTTCTGTCGGTGGCTCCGTCG 926
                                                                                                                                                                     8
                                                                                                                                                                                                                                          8
                       GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGAT
                                                                                                                                                                                                                                          GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
GGGGAAGTGTGGGTGGATAAGTAGGTGGATGTGTTGGT
                                                                                                 GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                       AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                GAGGAATTGTTGAAGGAATTGTTGGAGGATTTGTTGATGGCTTCGTTGGTGGACTAGTCG
                                                                                                                                     1509 BP; 495 A; 446 C; 277 G;
                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                            8.3%;
49.1%;
                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                            Score 40.4; DB 23; Pred. No. 0.053;
                                                                                                                                                                                                                                                                            Mismatches 111;
                                                                                                                                                                                                                                                                                                                                               291 T; 0 other;
                              225
 768
                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                1509;
                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                          Gaps
                                                                                                   187
                                                                                                                                                                     127
                                                                                                                                     866
                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                   WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ż
                                                                                                                                                                                                                                                                            0
```

THIS PAGE BLANK (USPTO)

Title: Perfect s Sequence:

Run ş

9

```
Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                           Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic
                                                        Pred.
score
                                                                                                                                                                                                                                                                                                                                                                                                          DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     score:
                                                                                                                                                                                                                                                                               GenEmbl:*

1: gb_ba:*

2: gb_ht;

3: gb_c
5: gb_7
6: gb_7
9: g
      Score
                                                 S
                                             No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                  of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-677-374-1
486
1 atgaacagaggatg
      Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                         Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1797656 seqs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 15:07:23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgaacagaggatgtttgca....aagtcatttcaacagaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright
                                                                                                                                                                                                                                                                                         gb_ba:*
gb_in:*
gb_in:*
gb_om:*
gb_ov:*
gb_pat:*
gb_ph:*
                                                                              em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                 gb_pr:*
                                                                                                                                                                                                                                gb_ro:*
gb_sts:*
gb_sy:*
gb_un:*
gb_v1:*
em_ba:*
                                                                                                                                       em_pat:*
em_ph:*
em_pl:*
em_ro:*
                                                                                                                                                                               em_fun: *
em_hum: *
em_in: *
em_mu: *
em_on: *
em_or: *
                                                                                                                       em_sts:*
em_un:*
                                                                                                                em_v1:*
                                                                                                                                                                       em_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version (c) 1993 - 2002
        DB
        H
                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Search time 941.223 Seconds
(without alignments)
10805.408 Million cell update
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.1.3
       Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cell updates/sec
                                                                                                                                       RESULT 1
AX252413
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                               KEYWORDS
SOURCE
ORGANISM
BASE COUNT
ORIGIN
                                       FEATURES
                                                                                        REFERENCE
                                                                                                                                                                                                                                 0 0
                                                                                                                                                                                                                                                                                                                          000000
                                                                TITLE
                                                        JOURNAL
                                                                                AUTHORS
                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                  70.6
658.4
658.8
668.4
668.6
668.2
668.2
668.2
668.2
668.2
668.2
668.2
                                Burzio,L.
Fish vaccine against piscirickettsia
Patent: WO 0168865-A 5 20-SEP-2001;
Aqua Health (Europe) Limited (GB)
Location/Qualifiers
                                                                                                                                              Sequence 5
Ax252413
                                                                                                     Piscirickettsia salmonis.
Piscirickettsia salmonis
Bacteria, Proteobacteria,
                                                                              Simard, N., Brouwers, H., Jones, S.F.,
                                                                                                                                        AX252413.1 GI:15985721
                                                                                               Piscirickettsia.
                                                                                      (bases 1
        139
                                                                                                                                                                                                                                 9.1 474
9.1 475
9.1 585
9.1 615
9.1 68418
9.1 153048
9.1 175302
        O)
      /organism="Piscirickettsia salmonis"
/db_xref="taxon:1238"
79 c 144 g 127 t
                                                                                                                                                                                                                                                                                          63454
111824
68650
123670
156370
166464
13123
46877
184999
                                                                                                                                                                                                                                                                                                                                                                           489 bp from Patent W00168865.
                                                                                       to 489)
                                                                                                                                                                                                                                 RIRTRAPRO
RIRGENSEQ
AF260571
I66494
AL160412
AC027343
AC027343
AC103214
AL158212
AL158212
AL158212
AL158212
AL158212
AFFU72952
AC003872
AC041433
AL611934
AFFU72952
AC104133
AL611934
AFFU72952
AC008363
                                                                                                                                                                                                                                                                                                                                                                                                                                          RIRANTRR
MRIZ69516
MRIZ69517
MRIZ69518
AF195118
RRU11020
AF02717
AF02717
AF02717
AF060706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF031534
RIRANT17KB
RIR17KGCA
RIRANT17KA
AE008675
AE008677KA
                                                                                                                                                                                                                                                                                                                                                                                                          AF181036
RMU11017
                                                                                                                                                                                                                                                                                                                                                                                                                          RPU17008
RAU11013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX252413
AF184152
RSU76907
                                                                                                                                                                                                                                                                                                                                                                                                 U04162
                                                                                                                                                                                                        ALIGNMENTS
                                                                                                       gamma subdivision; Piscirickettsia group;
                                                                                                                                                                DNA
                                                                             Griffiths, S.,
                                                                salmonis
                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                               M28482 R. prowazeki AF060704 Rickettsi AF060706 Rickettsi U17008 Rickettsia U17008 Rickettsia U11013 Rickettsia U11017 Rickettsia U11017 Rickettsia U11017 Rickettsia U04162 Rickettsia M74042 R. australis M9391 Rickettsia M9391 Rickettsia M9391 Rickettsia M9391 Rickettsia AF260571 Rickettsi I66494 Sequence 14 AC102004 Mus muscu AL160412 Human DNA AC027343 Homo sapi AC103214 Rattus no AL158162 Human DNA AB003872 Xylella f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M28481 R. typhi 17K
D16515 Rickettsia
M2840 R. conorii 1
AE008675 Rickettsi
M28479 R. rickettsi
M28479 R. rickettsi
M28456516 Male-Kill
AJ269516 Male-Kill
AJ269518 Male-Kill
AJ269518 Male-Kill
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AX252413 Sequence
AF184152 Piscirick
U76907 Rickettsia
AJ235273 Rickettsi
AF031534 Rickettsi
                                                                                                                                                                                                                                U72952 Plasmodium
AF104714 Plasmodium
L19047 Plasmodium
L19045 Plasmodium
AC018090 Drosophil
AC008362 Drosophil
AC020587 Homo sapi
                                                                                                                                                                                                                                                                                         AE003872 Xylella f
AC104133 Homo sapi
AL611934 Mus muscu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U11020 Rickettsia
AF027124 Rickettsi
                                                                               Valenzuela, P. and
                                                                                                                                                                PAT 05-OCT-2001
```

Database

Maximum Minimum

Result

õ

Best Local

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
AF184152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 GAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 GAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361 GAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT 180
                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (10-SEP-1999) Biochemistry &
Victoria, Petch Building, PO Box 3055,
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
2 (bases 1 to 4983)
Kuzyk, M.A. and Kay, W.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuzyk,M.A., Burian,J., Thornton,J.C. and Kay,W.W. Identification of a genus-common Rickettsial surface antigen in name of the common rickettsial surface antigen in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCGTCGCCAGCAATATTGTCGAGAAATTTCAGCAAAAAGGCGATGATTGCAGGGCAGAAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; gamma subdivision; Piscirickettsia
Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF184152

4983 bp DNA linear BCT 01-OCT-2000 Piscirickettsia salmonis alanine racemase (alr) gene, partial cds; (bax), DNA repair enzyme RadA (radA), 17 kDa antigen (OspA), and transposase (tnpA) genes, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Piscirickettsia salmonis
Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF184152.1 GI:10441343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATTGGCCATTGGTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                        /db_xref="taxon:1238"
/clone="pB12"
<1. .501
                                                                                                                                   /gene="alr"
                                                                                                                                                                                                                                                       /organism="Piscirickettsia
/strain="LF-89"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 486; DB 6; I
Pred. No. 4.7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                  salmonis
                                                                                                                                                                                                                                                                                                                                  Microbiology, University of Victoria, BC V8W 3P6, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 489;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                        CDS
                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /GOGOD_STATT=1
/CTGNS_TABLE=11
/FIGURES_TABLE=11
/PTOGUCT=*DNA repair enzyme RadA"
/PTOGUCT=*DNA repair enzyme RadA"
/PTOGUCT=*DNA repair enzyme RadA"
/PTOGUCT=*TAGT6998.1*
/PT
complement(3842.
/gene="tnpA"
/codon_start=1
                                                                                                     complement(3842.
/gene="tnpA"
                                                                                                                                                             /insertion_seq="insertion 3560. .3846
                                                                                                                                                                                                                                                                                                                                                                               /Codon_start=1
/Codon_start=1
/Codon_start=1
/Eras1_table=11
/Product="17 kDa antigen"
/protein_id="Anal7000.1"
/protein_id="Anal7000.1"
/db_xref="G:1.0441346"
/translation="MNRGCLGGSSLITISVFLVGCAQNESRQEVGAATGAVVGGVAGQ
CRSYSVEDVRTYQRYNKQERRQQYCRBFQQKAMIAGQKQEIYGTACRQPDGRWQVIST
CROWN NEW COMMON C
                                                                                                                                                                                                                                        /db_xref="taxon:1238"
/clone="pB12"
                                                                                                                                                                                                                                                                                                    /organism="Piscirickettsia
/strain="LF-89"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="similar to the rickettsial 17 kDa antigen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2834. .3322
/gene="ospA"
/evidence=experimental
2834. .3322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="ospA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIVFGEIGLSGEIRPVQRGLERIKEAVKHGFTQAIVPLANCPKQKVDGIEIVGVKHLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein_id="AAG17002.1"
/db_xref="G:10441348"
/ttanslation="MLSIAVITAYLACOPLESAPTSKTQINTAYSQDIOSIKQEF1/
KTTQSENTINQIILQKRQHTLSLIQKKSLSKQEITQLQALAKQYKLNNLHFKHPQDFS
LLLKRVDIIPNALISAQAINESNWGRSRPAVEGNNEFGHRCHYPGCGIIPKARPANNH
NEVANYSSWIASVRAYIHTLNTHNAYQALRDLRAHMRANHQDVSAFKLAEGLTAYSIK
GTKYVELIQTIITRYLSKESTSQIP"
1373. 2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /evidence=experimental
1373..2743
/gene="radA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="radA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Godon_start=1
/codon_start=1
/evidence=not_experimental
/product="alanine racemase"
/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="bax"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="bax"
                                                                                                                               .4561)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1257)
                                                                                                                                                                 sequence-like element"
                                                                                                                                                                                                                                                                                                                      salmonis"
```

밁

В δÃ

```
repeat_region
BASE COUNT 1760
ORIGIN
REFERENCE
AUTHORS
TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                          LOCUS
DEFINITION
ACCESSION
                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                           RESULT 3
RSU76907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                          3314
                                                                                                                                                                                                                                                                                     3254
                                                                                                                                                                                                                                                                                                                                 3194
                                                                                                                                                                                                                                                                                                                                                                               3134
                                                                                                                                                                                                                                                                                                                                                                                                                            3074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2834
                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                    CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                                                                                GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGC 2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATCAGTGTGTTTTTTAGTTGGC
                                                                                                                                                                                                                                          GAAAAA
                                                                                                                                                                                                                                                               GAAAAA 486
                                                                                                                                                                                                                                                                                                          CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCT 3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                           AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       486;
                             RicketLearuse 1 to 448)

1 (bases 1 to 448)

1 (bases 1 to 448)

Davis,M.J., Ying,Z., Brunner,B.R., Pantoja,A.

Rickettsial relative associated with papaya by

Power Microbiol. 36 (2), 80-84 (1998)
         2 (bases 1 to 448)
Ying, Z. and Davis, M.J.
                                                                                                              Rickettsia
Rickettsia
                                                                                                                                                           Rickettsia
U76907
 Direct Submission
                                                                                       Rickettsiaceae; Rickettsieae;
                                                                                         Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                               U76907.1 GI:2894794
                                                                                                                                                                                  RSU76907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1362
                                                                                                                                                                                                                                           3319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
llarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4562.
778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
                                                                                                                                                                      sp. 17kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .4849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1265 g
                                                                                                                                                                      common-antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 486; DB 1;
Pred. No. 6.3e-123;
); Mismatches 0;
                                                                                                                                                                                448
                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1578
                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ct
                                                                                                                                                                     gene,
                                                                                                                                                                     linear
partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 4983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                      bunchy
                                                                                                   Rickettsiales;
                                                                  and
                                                      Ferwerda, F.H.
y top disease
                                                                                                                                                                                BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                18-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                    3313
                                                                                                                                                                                                                                                                                                                                                                             3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2953
                                                                                                                                                                                                                                                                                                                                 3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                       REFERENCE
AUTHORS
                                                                                                  SOURCE
ORGANISM
                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                               ACCESSION
                                                                                                                                                                                            RPXX04
                                                                                                                                                                                                      RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                        404
                                                                                                                                                                                                                                                                                    344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132
                                                                                                                                                                                                                                                               432
                                                                                                                                                                                                                                                                                                                                                                                                                         167
                                                                                                                                                                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                                           372
                                                                                                                                                                                                                                                                                                                                 284
                                                                                                                                                                                                                                                                                                                                                       312
                                                                                                                                                                                                                                                                                                                                                                             227
                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47
```

밁 δò В Ş В 20 B Š 밁 δõ 밁 Ş В Š 밁 δ В ð

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         72 CTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGTGTTGCTGGCCA 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGAATAAACAAGGTAGTGGTACGCTAATTGGCGGAACTTTAGGAGGACTTGTTGGTTC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAATATTGTCGTGAATACACCCAAACAGTTGTAGTAGGTGGAAAAACAACAAAAAGCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCA 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTTCTCAAAGAGCTTTAGAAG----CTGCACCAAGCGGTAGCAGTGTACAATGGCGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAATTGGTTCTAAAATCGGTCAATCGATGGATGGATCAGCAGGATAAAATAAAGCTAAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAATTTGGTGGTGGTACGGGACGACTTGCTGCGGTAGGAGCAGGTGCGTTACTTGGTGC 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTA 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTGATAATGGTAATTATGGTACTGTGACACCAAGCAAAGCTTATAAAAATAATACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATCCTTGGCAACCAAATTGGTGCAGGTATGGATGAACAAGATAGAAAACTTGCAGAGCT
                                                                                                                                     complete yerwazekii.
Rickettsia prowazekii
Rickettsia prowazekii
Bacteria; Proteobacteria; alpha subdivision;
Bacteria; Proteobacteria; Rickettsia; typ
                                   Rickettsiaceae; Rickettsiae; Rickettsia; typ 1 (bases 1 to 237523)
Andersson, S.G., Zomorodipour, A., Andersson, J. Sicheritz-Ponten, T., Alsmark, U.C., Podowski, R Eriksson, A.S., Winkler, H.H. and Kurland, C.G. Tite genome sequence of Rickettsia prowazekii
                                                                                                                                                                                                                                                        AJ235273 AJ235269
AJ235273.1 GI:3861237
                                                                                                                                                                                                                                                                                                                        Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (01-NOV-1996) Tropical Research and Education Center, University of Florida, 18905 SW 280 Street, Homestead, FL 33031
                      mitochondria
                                                                                                                                                                                                                               complete genome.
                                                                                                                                                                                                                                                                                                                                            RPXX04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="ALAASMLEACQGPGGMNKQGSGTLIGGTLGGLVGSQEGGGTGRLAAVGAGALLGALLGALGGNDEQGDRKLAELTSQRALEAAPSGSSVQWKNPDNGNYGT
VTPSKAYKNNTGQYCREYTQTVVFGGKQQKAYGTACRQPDGQWQVV"
81 c 120 g 112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
/product="17 kDa common-antigen"
/protein_id="AAC02809.1"
/protein_fe="GI:2894795"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Rickettsia
/db_xref="taxon:789"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Puerto Rico"
                                                                                                                                                                                                                                                                                                                    237523
prowazekii strain
(6707), 133-140 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16.3%;
51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 79;
No.
                                                                                                                                                                                                                                                                                                                      bp !
Madrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
5e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp.
                                                                                  Podowski, R.M.,
                                                                                                                                                                                                                                                                                                                    DNA E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190;
                                                                                                                                                                                                                                                                                                                      complete
                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                          .
.
                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               448
                                                                                                                                                                                                                                                                                                                    ar BCT
                                          the origin of
                                                                                                                                                group
                                                                                    Naslund, A.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
••
                                                                                                                                                                                                                                                                                                                                            11-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
```

MEDLINE REFERENCE

99039499

```
gene
                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                Submitted (11-NOV-1998) S.G.E. Andersson,
Siv.Andersson@molbio.uu.se, Dept. of Molecular Biology, University
of Uppsala, Husargatan 3, Uppsala, S-751 24, SWEDEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 2
Andersson, S.G.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /Product="unknown"
/Product="unknown"
/Protein_id="CAA15138.1"
/db_xref="G1:3861239"
/translation="MTTILVIVIIIMISUSALFAATETAITASSPGKIHKIKIAGNKR
AKTYLEVIKKKERVIGTLLIGNSLINTICTTLATTLEISLIGNNGTIVASGYWAFIII
EKTACYPRAIAVAKPOLITIKMSSTIVIFIKLEKPINIALDVITKIETEFERINLIND
ISGTEEVRGVIEHTHOEGGYVKSERNNIGGILDIRNNfTVSEIMTHRSNIIALNIDLPY
ELIIKTLLSGAHTRIPLMODNRONIIGILDIRNNfTVSEIMTHRSNIIALNIDLPY
ELIOSINTEFIKGTTTIDJANRELDMNLSGILGIITLEDVIELTGPITCHPPH
BITOESNTEFIKGTTTTIDJANRELDMNLSGIAGITTAGLITHKIARIPNOGEVIKIF
NFKIIIKKIANKIDSVKITVLPMTEETISSE"
3341 5353
/product="CELL SURFACE ANTIGEN (sca5)"
                                                                                                                                    complement(7264. .12195)
                                                                                                                                                                                 complement(7264. .12195)
/gene="RP704"
                                                                                                                                                                                                         YAVLSNIDGKIIHAKIYYKPMASFIWIGVILTTAGFVIALIRKNSY"
                                                                                                                                'gene="RP704"
                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="CYTOCHROME C-TYPE BIOGENESIS PROTEIN CCMF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="RP703"
3341. .5353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="RP703"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /Product="unknown"
/product="unk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="RP702"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="RP70
2074. .3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NDSNKDIQVEHITSYVQDKEKOSKPQGFLTRIFNYFKNIVFKQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="RP701"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:782"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Rickettsia prowazekii"
/strain="Madrid E"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to 237523)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RP701"
                                                                                                           CDS
                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
```

```
/PICTEID_id="CAA15140.1"
//db_xref="GI:3861241"
//translation="MAOKPMFLKKIISAGLVTASTATIVAGFSGVAMGAAMOYNRTIN
//translation="MAOKPMFLKKIISAGLVTASTATIVAGFSGVAMGAAMOYNRTIN
//translation="MAOKPMFLKKIISAGLVTASTATIVAGFSGVAMGAAMOYNRTIN
// AAATTEDIGETDOAAGANLPVAPMSVITAMANNIPITEMPROHLUSLELDYANDLAVT
FIOVSDNTFAGEITNIAOQAKFFNFTVAAGKILNITGGGITVORASTINAONALTKYHGG
SKNGAATEENVTCTLGGNLKGIIELWTAAVAGKLISOGGAANAVIGTDNGAGTLNITNG
VSVUNGNATISGOVYAKMAVIGSANAGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGGILVTAGKUVY
NSNEGSTMEGNLDTQIVPDTRIIKANGGOYTEBHIVDVGLGGTTUMFNAGALVSASTDPN
LAAGSIOLDGSAIITGDLGNAGVUNALUHNTULTTUMFVNUNGLLINGSVULNHNNA
LAOLUNGSSKTILNAGDVANALQHITLANDASKILALDGANIIGANNGALVSASTDPN
QAAGGTIKLTYPDNIVVVNPDLDITTDTATAANADGILLNAGGALHF
LNTNTTLADGTNUCGSAENDLSTHEFATKANADSIILNAGGILVAANGGALHF
LNTNTTLADGTNUCGSAENDLSTHEFATKANADSIILNAGGILVAANGGALHF
LNTNTTLADGTNUCGSAENDLSTHEFATKANADSIILNAGGALFELONGGALHF
LNTNTTLADGTNUCGSAENDLSTHEFATHANADHITLSTTTNALOGGILVAADP
NTTTLADGTNUCGSAENDLSTHEFATHANATILLNAGGALFELONGGTHEGGALHF
LNTNTTLADGTNUCGSAENDLSTHEFATHANATILLSTTTLKNOGGTVLSGGMPNNEGT
IGGLENGSFKLKOVPETTDVNNCGSILANNTTLYSGLTTTKNOGTVLSGGMPNNEGT
IGGLENGSFKLKOVPISTDVNNCGSILANNTTLOGALVSNIGSLDFPVASGRFTGN
GGARENCTLGAENGSVULAGAANTTGGGTTLSTUMLIBANGTLS
SVNONANGFUDSTEDDFSMIVATGANKGTVTLGMALVSNIGSLDFPVASGTGANTLO
GGARENCTLGAENGSKLKOVPITTLANGNUTLTTGGTTTTLUDHANASGTOATTLO
GGARENCTLGAENGSKLTANDTTAAVATTANULTANDTOKT
SQLVKNFFAGGNALFTLINKVKSSGNEN KETGTTVANKARFUTNALTANDTSTNAATTLI
GALVKNFFAGGNALFTLINKVKSSGNEN KETGTTVANKARFUTNALTANDTOKT
SQLVKNFFAGGNALFTLINKVKSSGNEN KETGTTVANKARFUTNALTANDTOKT
SQLVKNFFAGGNALTETLNKVKSSGNEN KETGTTVANKARFUTNALTANDTOKTSTNAANGTLENGSTLAGGTLENGKSGNALTGGATANGTLAGGT
COMBLEGGT RETGYDENSAKKTANGGTLKVPNFN
AGGORDATAKTSYNIGLSANI
GEGEN RETGYDENSAKKTANGGTLKVPNFN
AGGORDATAKTSYNIGLSANI

        Complement(15220 .15507)
/gene="RP708"

complement(15220 .15507)
/gene="RP708"
                                                                           /translation="MINNKLTKKYYVASEVIRILNIALHKLRYLETKIPGLSHYKINN
RKYYTAHDIDLLQKFLFVSRREBYLEVRGYHRSDKDYLANFSNHHCASDTSRONEFQG
KNSECILNLHVQQRQDSQSAVVLSLMDNTVSSRIDILLTNFHNLSIQIKKILLIS"
                                                                                                                                                                                                                                         /product="unknown"
/protein_id="CAA15142.1"
/db_xref="GI:3861243"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /Translation="MKIROTAKPVIIGISGPELTDAERELFEEHNPLGIILFRRNIRK NEKGEOKAALIKLIADIKEVLGDNTIIAIDQEGGMVRLIAPTFVDAPAAQTFTELQ TCKYNYSTIAKELREVGINLDFAPVADLIHDGADKIISDRSFGKEPEIVVPLFLSAIA GLOEEKYTRCIKHIFGHGRATVDSHIELPILDTSLKTLEDTDFKVFKELAKYDYKLA ATAHVIYTALDDDNPATLSQIVIDYIKSNIGFKGLIISDTIEMQALSGSMADITKGAL DAGVDIVLECTGEFNKMSEVLGSVAENSIDKFSDLFIS"
                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="RP707" .15025)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Complement(14552./gene="RP707"
                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="unknown"
/protein_id="CAA15141.1"
/db_xref="GI:3861242"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Complement(13563. .14507)
/gene="RP706"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(13563. .14507)
/gene="RP706"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3-pyrophosphohydrolase."
complement(12953. 13216)
/gene="RP705"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="pseudogene that lacks ATG or GTG initiation codon. Homology to guanosine-3,5-bis(diphosphate)
```

/product="INTEGRATION HOST FACTOR ALPHA-SUBUNIT (hima)" /protein_id="CAA15143.1"

/transl_table=11

```
RESULT 5
AF031534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              172624 CAAGGTACCGGTACACTTCTTGGTGGCGCAGGAGGTGCATTACTTGGTTCTCAATTCGGT 172683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172684 CAAGGTAAAGGACAACTTGTCGGAGTAGGTGTAGGCGCATTACTTGGGTGTAGTTCTTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142 AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 197; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTTGCTGGCCAGCTGTTTGGT 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACAAATCGGCGCAAGTATGGATGAGCAGGATAGAAGACTTCTAGAACTAACATCACAA 172803
                                                                                             TGCCGTCAACCTGATGGGCAATGGCAAGT 173009
                                                                                                                                                                                                           CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                                                                                                                                                                                                                                      GTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT
                                                                                                                                                                                                                                                                                                                                                                    AGAGCTTTAGAATCTGCACCTAGCGGTA---GTAACATAGAATGGCGCAATCCAGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                AAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT
                                                                                                                                                                                 CGTGAATACACTCAAACAGTTATAATAGGCGGAAAACAACAAAAAAACATATGGTAATGCA 172980
                                                                                                                                      TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="GI:3861244"
/translation="MTITKNKISIMLSSKLGFSNNLCEAIVNTVFSNILEIAKVQKLT
LKNFGSFEVKQKTPRPGINFHTKSPVMIASKKNLRFTPSEKLKALINKSML"
18405. .18701
/gene="RP709"
18405. .18701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(21112. .21608)
/gene="RP711"
complement(21112. .21608)
/gene="RP711"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MAVGRQYIEDHTEQLHKLCDNLVKYIELETKAITHEKAAEDTEV VIEVSLDLDNSSDDASIINKKAITVTSDDIANSNEDAARNTNKSHGDVLRCYYQ" complement(19685...20789) /gene="RP710" complement(19685...20789)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(22602.
/gene="RP712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Pseudogene with two
authentic in-frame terminal
transposase."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="CAA15145.1"
/db_xref="GI:3861246"
/translation="MSIEKEKFWASHKQVVKEIGGTNLINGKHDLFKAVAYTSDDIEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="RP712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(22602. .23066)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to resolvase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Pseudogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transposase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="RP710"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="CAA15144.1"
/db_xref="GI:3861245"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="RP709"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 70.6; DB 1;
Pred. No. 2.3e-08;
0; Mismatches 189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 23066)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         with one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            with two authentic frameshifts termination codons. Homology t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           authentic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 237523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         frameshift.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s and
to
```

Ş

В Ş

Ş В Š 밁 δ В õ 밁 δÃ 밁

밁

```
REFERENCE
AUTHORS
                                                                                                                                                                                   밁
                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
              DEFINITION
                                                                                                                  밁
                                                                                                                                            Qy
                                             RIRANT17KB
                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
ACCESSION
                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                       184
                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 TGTTGGCGGTGTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCAT 170
                                                                                                                                                                                                                                                                                                                                                                                                                       171 TGGTGGTGCTGTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCA
                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                         64 CGGCGGTGCATTACTTGGCTCTCAATTCGGTAAAAGGTAAAGGACAGCTTGTCGGAGTAGG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51 TTTAGTTGGCTGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGT 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 TTCATATATCGGTCCACGCGGTATGAATAAACAAGGCACAGGAACACTTCTTGGCGGTGC 63
                                                                                                                                                AGGGCAGAAGCAAGAGTTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTG
                                                                                                                  CGGAAAACAACAAAAAGCATACGGTAATGCATGCCGCCAACCTGACGAACAATG
                                                                                                                                                                                   AACTTATAGAAATAGCACTGGTCAATATTGCCGTGAGTATACTCAAACAGTTGTAATAGG
                                                                                                                                                                                                                                                      TAGTAGTACAGAATGGCGTAATCCTGATAACGGCAATTACGGTTATGTAACACCTAATAA
                                                                                                                                                                                                                                                                                     GCGTAATCCAGATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTA
                                                                                                                                                                                                                                                                                                                                                     GGATAAAATAAAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTG
                                                                                                                                                                                                                                                                                                                                                                                        TGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTATGGATGAGCA
                                                                                                                                                                                                                    CAATAAGCAAGAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGC
                                                                                                                                                                                                                                                                                                                       GGATAGAAGACTTGCAGAACTCACCTCACAAAGAGCTTTAGAAG----CAGCTCCTAGCGG
R.typhi 17K
M28481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (28-OCT-1997) Pathology, UTMB at University Blvd., Galveston, TX 77555-0609, Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF031534 COOLEYI 17 kDa AF031534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Billings,A.N., Teltow,G.J. and Walker,D.H. Molecular characterization of a novel spotted rickettsial species from Ixodes scapularis in
                             RIRANT17KB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Billings, A.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsia cooleyi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsia cooleyi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF031534.1 GI:2654012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 416)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=2
/transl_table=11
/product="17 kDa antigen"
/protein_id="AAB95267.1"
/db_xref="GI:2654013"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="GSYIGPRGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGVGLLGAVLGGQIGAGMDEQDRRLAELTSQRALEAAPSGSSTEWRNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVYIGGKQQKAYGNACRQPDEQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Rickettsia cooleyi"
/db_xref="taxon:69410"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to 416
               genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Teltow, G.J. and Walker, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 68.4; DB 1;
Pred. No. 4.1e-08;
0; Mismatches 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             108 g
              antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         416 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen
                             qd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsia
              gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA linear
gene, partial cds
                             DNA
              complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Galveston,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fever group
                               BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                               26-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                       350
                                                                                                                                                                                                                                                                                                                                                        290
                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                       230
                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
```

```
RESULT 7
RIR17KGCA
                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Sim
Matches 194;
                                                 442 TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                  437
                                                                                                                        382
                                                                                                                                    322 GTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                           320 AGAGCTTTAGAATCT---GCTCCTAGCGGTAGTAACATAGAATGGCGCAATCCAGATAAT 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                             262 AAGGTAAAAGCAGGGCAAGTGACAGGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT 321
                                                                                                                                                                                                         260 GGACAAATCGGTGCAAGTCTGGATGAGCAGGATAGAAAACTTCTAGAACTAACATCACAA 319
                                                                                                                                                                                                                        202 TCTAAAATCGGTCAATCGATGGATGAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA 261
                                                                                                                                                                                                                                                      200 CACGGTAAAGGACAACTTGTCGGAGTAGGTGTAGGCGGATTACTTGGGGCAGTTCTTGGT 259
                                                                                                                                                                                                                                                                      142 AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGGTTTTTGGGTTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                   140 CAAGGGACTGGAACACTTCTTGGTGGCGCGGCGGGGGGATTACTTGGTTCTCAATTCGGT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                               mat_peptide
                                 TGCCGCCAACCTGACGGACAATGGCAAGT 525
                                                                 82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTTGGCCAGCTGTTTGGT 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                       CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -35_signal
-10_signal
                                                                                                            GGCAATCATGGTTACGTAACACCTAATAAAACTTATAGGAACAGTACAGGTCAATATTGC 436
                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             by B.Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia typhi
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsiaee; Rickettsia; typhus group.

Anderson, B.E. and Tzianabos, T.

Anderson, B.E. and Tzianabos, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Comparative sequence analysis of a genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R.typhi DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M28481.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteriol. 171, 5199-5201 (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry and printed copy of sequence Anderson, 27-OCT-1989.
                                                                                                                                                                                                                                                                                                                                                                                                                        /product="17 kD antigen"
93 c 122 g 138 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="17 kD antigen signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /PTOTEIL_1="AAA26377.1"
/PTOTEIL_16="AAA26377.1"
/B_XEEf="0I:152460"
/TEARS1ation="MKLSKVMILALAASMLOACNGPGGMNKOGTGTLLGGAGGALLG
RNPDMGNHGYVTPNKTYRNSTGGYCRSYTGTVVIGGKQQTTYGNACROPDGGWQVVN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="17 kD antigen precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'product="17 kD mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Rickettsia typhi"
/db_xref="taxon:785"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                               13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:152459
                                                                                                                                                                                                                                                                                                                                                          Score 65.8; DB 1;
Pred. No. 2.2e-07;
0; Mismatches 192;
                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                              192;
                                                                                                                                                                                                                                                                                                                                                                              Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for [1] kindly submitted
Ъ
                   Qγ
                                             В
                                                                 Qγ
                                                                                          DЬ
                                                                                                               δÃ
                                                                                                                                       Д
                                                                                                                                                             γÇ
                                                                                                                                                                                     рь
                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                 Дb
                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                          439
                                                                 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
```

В Qy Дb QΥ DЬ δĀ DЪ δÃ DЬ Ş В Qγ В δÃ

RESULT

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
499 TGCCGCCAACCTGACGGACAATGGCAAGT 527
                  442 TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                          322 GTTGAGGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCCAGCAATATTGT 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                           322 AGAGCTTTAGAAAC---AGCTCCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAAC
                                                                                                                                                                               262 AAGGTAAAAGCAGGGGCAAGTGACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                 262 GGACAAATCGGTGCAGGTATGGATGAGCAGGATAGAAGACTTGCAGAGCTTACCTCACAG 321
                                                                                                                                                                                                                                    202 TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                 142 AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                   142 CAAGGTACAGGAACACTTCTTGGCGGTGCTGGTGGCGCATTACTTGGTTCTCAATTCGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                       82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTTTGGT 141
                                                         CGTGAGTACACTCAAACAGTTGTAATAGGCGGAAAACAACAAAAAGCATACGGTAATGCG 498
                                                                                               GGCAATTACGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGC 438
                                                                                                                                                                                                                                                                             AAGGGCACAGGACAGCTTGTGGGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95229950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Furuya,Y., Katayama,T., Yoshida,Y. and Kaiho,I.
Specific amplification of Rickettsia japonica DNA from clinical
Specimens by PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (05-UUL-1993) Yoshiya Yoshida, Kanagawa Prefectural
Pabulic Health Laboratoty; 52-2 Nakao-cho, Asahi-ku, Yokohama
Kanagawa 24, Japan (Tel:045-363-1030, Fax:045-363-1037)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia; spotted fever group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17K genus-common antigen; 17k dalton protein.
Rickettsia japonica (sub_species:YH) DNA.
Rickettsia japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D16515
D16515.1 GI:695412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIR17KGCA
Rickettsia japonica 17k genus-common antigen gene,
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="BAA03965.1"
/db_xref="GI:1435056"
/translation="MKLLSKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
SOFGKGTGQLYGYGYGGALLGGAYLGGQTGGAGGALLG
RNPDNGNYGYYTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQNQVVN"
92 c 129 g 140 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Microbiol. 33 (2), 487-489 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="propagated in Vero cells" 58. 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Rickettsia japonica"
/sub_species="YH"
/db_xref="taxon:35790"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1. .537
                                                                                                                                                                                                                                                                                                                                                                                                                                  13.5%;
49.9%;
                                                                                                                                                                                                                                                                                                                                                                                                         Score 65.8; DB 1;
Pred. No. 2.2e-07;
0; Mismatches 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCT 04-FEB-1999
Complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yokohama,
                                                                                                                                                                                                                                                                                                                                                                                            1,
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                              Š
                                                                                                                                       망
                                                                                                                                                                   Š
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                           В
                        Ş
                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RIRANT17KA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -35_signal
-10_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                  314
                                                                                                                                                                                                                                                                                                                        192
                                                                                                                                                                                                                                                                                                                                                           194
                                                                                                                                                                                                                                                                                                                                                                                               132
 491
                                 432
                                                                    431
                                                                                                                                           371
                                                                                                                                                                              312
                                                                                                                                                                                                                                                                                      254
                                                                                                                                                                                                                                                                                                                                                                                                                                134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                72 CTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCA 131
                                                                                                                                                                                                                                 GAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGGATACAGGCAA 311
                                                                                                                                                                                                                                                                                                       ATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCA
                                                                                                                                                                                                                                                                                                                                                                              GCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                              CATGAATAAACAAGGTACAGGAACACTTCTTGGCGGTGCTGGCGGCGCGCATTACTTGGTTC 193
                CGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                                                                                           TAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCA
                                                                                                                                                                                                                                                                                                                                                           TCAATTCGGTAAGGGCAAAGGACAGCTTGTTGGAGTAGGTGGAGGTGCATTACTTGGAGC
CGGTAATGCATGCCGCCAACCTGACGGACAATGGCAAGT
                                                                  TCAATATTGCCGTGAGTACACTCAAACAGTTGTAATAGGCGGAAAACAACAAAAAGCATA
                                                                                                        GCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTA 431
                                                                                                                                           TCCGGATAACGGCAATTACGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGG
                                                                                                                                                                                                                                                                                     AGTTCTTGGTGGACAAATCGGTGCAGGTATGGATGAACAGGATAGAAGACTTGCAGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        by B.Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anderson, B.E. and Tzianabos, T.
Comparative sequence analysis of a genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 539 Anderson, B.E. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R.conorii 17K genus-common antigen M28480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia; spotted fever gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsia conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M28480.1 GI:152457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIRANT17KA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .conorii DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteriol. 171,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ft entry and printed copy of sequence B.Anderson, 27-OCT-1989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="17 kD antigen signal peptide"
120. .536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="17 kD antigen"
93 c 125 g 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MKLLSKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
SQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /transl_table=11
/protein_id="AAA26376.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="17 kD antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Rickettsia
/db_xref="taxon:781"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="GI:152458"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="17 kD mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to 539)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5199-5201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 64.6; DB 1;
Pred. No. 4.7e-07;
                                                                                                                                                                                                                - AGCTCCTAGTGGTAGTAACGTAGAATGGCGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      conorii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rinear BCT complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels

    kindly submitted

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                    490
                                                                                                                                                                            371
                                                                                                                                                                                                                370
                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                        251
                                                                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                             191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ļ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
AE008675
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBMED
                                                gene
                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                           gene
                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                   repeat_region
                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Selfish DNA and the origin of genes Science 291 (5502), 252-253 (2001)

3 (bases 1 to 10127)

Ogata, H., Audic, S., Renesto-Audiffren, P., Fournier, P.-E., Barbe, V., Samson, D., Roux, V., Cossart, P., Weissenbach, J., Claverie, J.-M. and Pacult D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia conorii
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ogata, H., Audic, S., Barbe, V.,
Raoult, D. and Claverie, J.M.
Selfish DNA in protein-coding
Science, 290 (5490), 347-350 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 (bases 1 to 10127)
Ogata, H., Audic, S., R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AE008675 10127
Rickettsia conorii Malish 7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   authors are appreciated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    http://igs-server.cnrs-mrs.fr/. The database intends to provide updated data. Annotation of the genome is an ongoing task whose goal is to make the genome sequence more useful. Comments to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (26 APR-2001) Unite des Rickettsles, Faculte de Medec CNRS UMR 6020, Universite de la Mediterranee, 27 boulevard Jean Moulin, Marseille Cedex 05 13385, France A public version of R. conorii genome database is accessible at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Raoult,D.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ogata,H., Audic,S., Renesto-Audiffren,P., Fournier,P.-E., Barbe,V., Samson,D., Roux,V., Cossart,P., Weissenbach,J., Claverie,J.-M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mechanisms of Evolution in Rickettsia Science, 293 (5537), 2093-2098 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Raoult, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ogata,H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsia conorii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE008675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AE008675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20485642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      103065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 AE006914
5.1 GI:156
             /gene="RC1277"
1141. .1452
                                                                               complement(1064.
                                                                                                                                                                         /product-methionine aminopeptidase [EC:3.4.11.18]"
/protein_id-"AAL03814.1"
/db_xref-"GI:520414"
/thenslation-"MTIKIHTGKDFIKMRAAGKLAAETLDFITDHYKPNUTTNSLNGL
/translation-"MTIKIHTGKDFIKMRAAGKLAAETLDFITDHYKPNUTTNSLNGL
CHNFITSHNAVPAPLNYKGFPKSICTSINHVVCHGIPNDKPLKNGDIVNIDUTVILDG
CHNFITSHNAVPAPLNYKGFPKSICTSINHVVCHGIPNDKPLKNGDIVNIDUTVILDG
                                                           /note="REP02, RS3-like
                                                                                                                       complement (977.
                                                                                                                                         GWTVTTRDKSLSAQFEHTIGVTKDGFEIFTLSPKKLDYPPY"
                                                                                                                                                        SVVRDYTGHGIGRVFHDEPSILNYGRSGTGLTLEEGMFFTVEPMINAGNYDTILSKLD
                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Audic, S. and Claverie, J.-M.
                                                                                                        /note="REP03,
                                                                                                                                                                                                                                                                                                                      /gene="map"
                                                                                                                                                                                                                                                                                                                                                                          /gene="map"
                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:781"
                                                                                                                                                                                                                                                                                                                                                                                                                                /strain="Malish
                                                                                                                                                                                                                                                                                                                                                                                                                                               ∕organism="Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                         note="RC1276"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:15620413
                                                    .1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barbe, V.,
                                                                                                  repeated element"
                                                                                                                          .1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp DN
section
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g genes of Rickettsia
(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Artiguenave, F., Fournier, P.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                               conorii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NA linear BCT 14-SEP-2001
107 of 114 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Faculte de Medecine,
27 boulevard Jean
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group.
```

codon_start=1

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                               complement (4505.
                                                                                                                                                                                                                                                          /product="uiknown"
/product="uiknown"
/product="uiknown"
/product="uiknown"
/protein_id="AAL03819.1"
/db_xref="GI:15620419"
/translation="MKKLLIIAAASTALLTSGLSFADCDMNSSVDSSTNSSMSSSVEN
OWYLKLNAGGVIENKTKPKGADFKLNNIKSNIKSNIGFTGEIGAGYVIMDNLRTDLTI
GTVASSHLKKSKTYPDGNSFSVKNRPTIVSVLLNGYVDFVDLSMFKVFAGAGVGAAFV
KEKHISKDIKGGVTDTFNGTTKNKTNFAYQLSLGTSFEVAQGVKAELVYSWRDYGKTK
                                                                                                                                  /gene="RC1282"
                                                                                                                                                                                                                                                   NTTKTINGDKVKFGGTHYKGHNLMAGLRFDM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="undecaprenyl-phosphate
/product="undecaprenyl-phosphate
alpha-N-acetylglucosaminyltransferase [EC:2.4.1.-]"
/protein_id="AAL03817.1"
/db_xref="GI:15620417"
/db_xref="GI:15620417"
/tanslation="MNINSYSTLFIESEISTAILTYILTKYLPTIGLVDIPSNRRSHD
KTEPRGGGLAIVEYVMIALSGFEYITSNNEVNSIKILPLILAKASISFLDDLKAVPIL
RAIVHLICAAFAIFLFSQLNSYHILIYSILVJALSGFILFNHYMDGIDGNSCVESIH
LSSTMLILCFLOPPTINNPYFITSVNVIILGGSCGFLIFNHPAKIFLGDVGSISLGF
LTGLCLLLLALTSTNLEJACAIASLYXITDAVLTILTRLLNKEKINQPHLKHFFQKAV
                                                                                                                                                                                               /note="REP03,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(3509. .4258)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(3509. .4258)
/gene="RC1281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="REP02, RS3-like 3313. .3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="unknown"
/protein_id="AAL03818.1"
/protein_id="AAL03818.1"
/db_xref="GI:15620418"
/translation="MKLIKEDIDKIVRHIFAKOHPLLBEIMINWNKIVGFNFSTKALP
LKITTYTYKKOKINTLFIQAEDNATAAELPYYODIILERIKIYLGFAAIHOMNVTFYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="REP01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="RC1281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="RC1280"
2792. .3115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QKGKSHKQVVSIIAVCNIFLMIISVTSLHFPVISIMLALAVITLTVQSLLK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /92. .3115
/gene="RC1280"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="mray2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="mraY2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MKQKIINKNINASWSSWIDYLKVNMGNWRLEQFRILFLNKKNIL
IADEVLSQGTIDQAAVYPREIIKRALFNEASSLILVHHHPSGSPEPSKANIHMTNKIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="similarity to DNA repair protein (RadC)"
/protein_id="AAL03816.1"
/db_xref="GI:15620416"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="RC1279"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="similarity to DNA repair protein (RadC)"
/protein_id="AAL03815.1"
/db_xref="GI:35620415"
/translation="MLENNILEFSNDETIDTPHYIGHRKRVKERFVAAGAEYFSDYEL
LEVMLFSAIPRKDIKPLAKKLLDHFDITDLINLDKERLLSIKGTNENLYINFALRELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'gene="RC1278"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTINIIVLNLICSYEYK"
                                                                                                                                                          repeated element"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeated element"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat"
                                                             Qγ
                                                                                                                              DЪ
                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                          8208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
192 ATTAATTGGTTCTAAAATCGGTCAATCGATGGATGAGGATAAAATAAAGCTAAACCA 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                            TCAATTCGGTAAGGGCAAAGGACAGCTTGTTGGAGTAGGTGTAGGTGCATTACTTGGAGC
                                                                                                                                                                                                                                                             CTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCA 131
                                                                                                                                                   GCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGGGTGG
                                                                                                                                                                                                                       CATGAATAAACAAGGTACAGGAACACTTCTTGGCGGTGCTGGCGGCGCATTACTTGGTTC 8267
                                                                                                                                                                                                                                                                                                                                                                              il Similarity
197; Conserv
                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="cytosine deaminase [EC:3.5.4.1]"
/proteth_id="AAL03823 1"
/db_xref="G1:15620423"
/translation="MNILDKEANFUNFEMEQALKQAKIAFDKNEVPVGAVVVDRLHQ
KIIASTHNUTEEKNUALYHAEIIAINEACNLISSKNLNDYDIYVTLEPCAMCAAAIAH
SRLKRLFYGASDSKHGVVESNLRYFNSSACFHRPEIYSGILAEDSGLLMKEFFKRIRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(7027. .7947)
/gene="p34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="p34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="RC1286"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (6540. .7046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MLKLLTPYYENKLSKVIIPILAISTCVMMIIGLYLALIVSPVDY
QQGDFVRIMYVHVPASWMALGVVVFMAVCSFSYLVMKTTISYLLAVASSYVGATFTLI
SLVTGSLMGKPIWGTWWVWDARLTSMLTLFLLYLSYIIIVNSADNIRKAQNPSSIIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="RC1285"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="RC1285"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(6540. .7046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RTAILIDKIKNR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IGLINIPIVKFSVNIWYSLHQPASVLRLGSPTIHSSMLKPLIIMFISFILYFLLVLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="heme exporter protein C"
/protein_id="AAL03822.1"
/db_xref="GI:15620422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(5833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(5338...5508)
/note="REP06, A and T rich
complement(5478...5828)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(5833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RC1284"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DKFNKYIGSVKIAN'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene-"fdxA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="ccmC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="ccmC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           translation="mtyvvtdecvkckytdcvevcpvdcfyegereddfmlvinpdectdakkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolektytolekkytolekkytolekkytolekkytolekkytolekkytolektytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolektylikakytolekkytolekkytolekkytolekkytolekkytolektytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolektytolektytolekkytolekkytolekkytolekkytolekkytolekkytolekkytolektytolekkytolekkytolekkytolekkytol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="ferredoxin"
/protein_id="AAL03821.1"
/db_xref="GI:15620421"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(5478.
/gene="fdxA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product-"uuknown"
/product-"uuknown"
/product-"aalio3820.1"
/protein_id="Aalio3820.1"
/db_xref="GI:15620420"
/translation="MLIMKKLLLIAATSATMLSSSVSFAEGMDHEWYLRIDTGAAMFN
/translation="MLIMKKLLLIAATSATMLSSSVSFAEGMDHEWYLRIDTGAAMFN
EEKDKAATGVKLKSUTTYPVALGIGYYISENFRADLTLGTIIGGKLKKSGAATWAPFTR
INISASHKPTITRLLINGYVDLTNFDMFDVFAGAGVVSALVEKITYNGITGLSSNTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NRTNISYKLTLGTSAQIADGVKVELAYSWIDDGRTKSKNVIYQGTSVPTGGMHYQSHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="RC1283"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                      13.3%;
                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                          Score 64.6; DB 1;
Pred. No. 6.9e-07;
0; Mismatches 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .7947)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 6525)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 6525)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .5828)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeated element"
                                                                                                                                                                                                                                                                                                                                                                                                                       Length 10127;
                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                               8327
                                                                                                                                                             191
```

CDS gene

CDS

CDS

ð

CDS gene

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
RIRANT17KD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                      δ
                                                           В
                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                         Query Match
Best Local
                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -35_signal
-10_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8505 TCAATATTGCCGTGAGTACACTCAAACAGTTGTAATAGGCGGAAAACAACAAAAAAGCATA 8564
                                                                                                                                                                                                                                                                         sig_peptide
 204
                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432 CGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                            144 CAAGGTACAGGAACACTTCTTGGCGGTGCTGGCGGCGCATTACTTGGTTCTCAATTCGGT
                                                                                           82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTA 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCTCACAGAGAGCTTTAGAAAC---AGCTCCTAGTGGTAGTAACGTAGAATGGCGTAA
                AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGCTGTTTTGGGTGGATTAATTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGTAATGCATGCCGCCAACCTGACGGACAATGGCAAGT 8603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCGGATAACGGCAATTACGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTTCTTGGTGGACAAATCGGTGCAGGTATGGATGAACAGGATAGAAGACTTGCAGAGCT
AAGGGCAAAGGACAGCTTGTTGGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAA
                                                                                                                           al Similarity 49.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8935917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    M28479.1 GI:152463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M28479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R.rickettsia 17K genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Comparative sequence analysis of a genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 539)
Anderson, B.E. and Tzianabos, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettslaceae; Rickettsleae; Rickettsia; spotted fever gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RIRANT17KD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .rickettsia DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteriol. 171, 5199-5201 (1989)
                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Entry and printed copy Anderson, 27-OCT-1989.
                                                                                                                                                                                                                                                                        /translation="MKLLSKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
SQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEW
RNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN"
60. .119
                                                                                                                                                                                                                                                                                                                                                                                                                      /product="17 kD mRNA" 60. .539
                                                                                                                                                                                                         /product="17 kD antigen"
92 c 125 g 14
                                                                                                                                                                                                                                         /note="17 kD antigen signal peptide" 120. 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Rickettsia
/db_xref="taxon:783"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAA26379.1"
                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                      /note="17 kD antigen
                                                                                                                                         13.2%;
                                                                                                                         Score 64.2; DB 1;
Pred. No. 6.1e-07;
0; Mismatches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp DNA
n antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of sequence
                                                                                                                                                                                                                                                                                                                                                                                                      precursor"
                                                                                                                                                                                                           143 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rickettsii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                             193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                        Length 539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kindly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BCT 26-APR-1993
                                                                                                                             ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     submitted
                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8444
263
                              201
                                                           203
                                                                                             141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  371
                                                                                                                             ۳
```

```
JOURNAL
MEDLINE
COMMENT
                 δÃ
                                                В
                                                                            δÃ
                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RIRANTRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                    mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                           source
501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             324
                                               154 CAAGGTACAGGAACACTTCTTGGCGGTGCTGGCGGCGCATTACTTGGTTCTCAATTCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202 TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA
                                                                  82 CAAGAAGTCGGACCTGCGACTGGGGGCTGTTGTTGGCGGGTGTTGCTGGCCAGCTGTTTGGT 141
                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCGCCAACCTGACGGACAATGGCAAGT 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTGAGTACACTCAAACAGTTGTAATAGGCGGAAAACAACAAAAAGCATACGGTAATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCAATTACGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGCTTTAGAAAC - - - AGCTCCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACAAATCGGTGCAGGTATGGATGAACAGGATAGAAGACTTGCAGAGCTTACCTCACAG
                                                                                                            193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiaceae; Rickettsiae; Rickettsia; sported re 1 (bases 1 to 620)
Anderson B.E., Regnery.R.L., Carlone,G.M., Tzianabos McDade,J.E., Fu,Z.Y. and Bellini,W.J. Sequence analysis of the 17-kilodalton-antigen gene
                                                                                                                                                                       Unreported.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Bacteriol. 169, 2385-2390 (1987) 87222152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R.rickettsii (strain Sheila Smith) DNA, clone Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Draft entry and computer-readable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M16486.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M16486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R.rickettsii 17K antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RIRANTRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B.E.Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        B.E.Anderson, 23-OCT-1987. and -10 regions are located at positions 12-17 Location/Qualifiers
                                                                                                                                                                                       206
                                                                                                            Conservative
                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                            /organism="Rickettsia rickettsii"
/db_xref="taxon:783"
70. .126
                                                                                                                                                                                      /product="17kd antigen"
105 c 142 g 1
                                                                                                                                                                                                                                   /translation="mkllskimijalatsmlqacngpggmnkqgtgtllggaggallg
sqfgkgkgqqlvgvgvgvgallgavlggqjgagmdeqdrrlaeltsqraletapsgsnvew
RNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQkaygdacrqpdeqwqvvn"
                                                                                                                                                                                                                                                                               /protein_id="AAA26381.1"
/db_xref="GI:152468"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:152467
                                                                                                                                                                                                                                                                                                               transl_table=11
                                                                                                                                                                                                                                                                                                                                 /codon_start=]
                                                                                                                                                                                                                                                                                                                                              /note="17kd antigen
                                                                                                                                                                                                                                                                                                                                                                            /note="17kd antigen signal peptide"
                                                                                                                           13.2%;
                                                                                                           0;
                                                                                                         Score 64.2; DB 1;
Pred. No. 6.2e-07;
0; Mismatches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620
                                                                                                                                                                                                                                                                                                                                              precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complete
                                                                                                                                                                                         167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                            193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cds
                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               spotted fever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tzianabos,T
                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and 33-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kindly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from
                                                                                                           ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               group.
                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             381
                   201
                                                213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          323
                                                                                                           ۲.
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
         _Query Match
                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
MRI269516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                               primer_bind
                                                                                                                                                                                                                                                         primer_bind
                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCCGCCAACCTGACGAACAATGGCAAGT 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTGAGTACACTCAAACAGTTGTGATAGGCGGGAAACAACAACAAAAAGCATACGGTGATGCA 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCAATTACGGTTACGTAACACCTTAATAAAACTTATAGAAATAGCACTGGTCAATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGCTTTAGAAAC---AGCTCCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACAAATCGGTGCAGGTATGGATGAACAGGATAGAAGACTTGCAGAGGTTACCTCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA
                                                                                                                                                                                                                                                                                                                                                             Schulenburg, H.
Direct Submission
Submitted (03-APR-2000) Schulenburg H., Department of Evolutionary
Biology, Institut fuer Spezielle Zoologie, Huefferstr. 1, 48149
Muenster, GERMANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AJ269516.1 GI:8920292
17 kDa antigen.
17 kDa antigen.
male-killing Rickettsia from Adalia decempunctata.
male-killing Rickettsia from Adalia decempunctata
male-killing Rickettsia from Adalia decempunctata
macteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGGCAAAGGACAGCTTGTTGGAGTAGGTGGTAGGTGCATTACTTGGAGCAGTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              von Der Schulenburg, J.H., Habig, M., Sloggett, J.J., Webberley, K.M., Bertrand, D., Hurst, G.D. and Majerus, M.E. Incidence of male-killing rickettsia spp. (alpha-proteobacteria) in the ten-spot ladybird beetle adalia decempunctata L Appl. Environ. Microbiol. 67 (1), 270-277 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MRI269516
Male~killing Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antigen gene.
                                                 133
                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 434)
                                                                      /translation="AlatsmicactgpegmnkQgtgtllggaggallgsQpgkgkgQgl
vgvgvgallgavlggQtgagmdeQdrrlaelfsQraleaapsgsnvewrnpdngnhgy
vtpnktyrnstgQycreytQtvviggkQQksygnacrQpdeQ"
415. .434
                                                                                                                                               /transl_table=11
/product="17 kDA antigen"
/protein_id="CAB96381.1"
/db_xref="CT:8920293"
                                                                                                                                                                                                                           /note="PCR primer <1. .>434
                                                                                                                                                                                                                                                                             decempunctata"
/specific_host="Adalia decempunctata"
/db_xref="taxon:120393"
                                                                                                                                   /db_xref="SPTREMBL:Q9K4W8"
                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                    /organism="male-killing Rickettsia from
                                                                                                                                                                                                                                                                      note="isolated
                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                87
    12
                                              PCR primer
c 113 g
    . 88
   Score 62.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434
from
                                                                                                                                                                                                                                                               from 10spot ladybird"
                                             9
                                                           R2"
                                                                                                                                                                                                                                        R1."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp |
Adalia
                                              101
DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA linear BCT 2/-JAN-
a decempuntata partial 17kDA
ļ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BCT 27-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261
                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                   MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MRI269517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        432 ATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        102
```

```
Best Local Similarity 50. 
Matches 182; Conservative
                                                                                                                                                                                                     primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462 TTG 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282 GACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTA 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  195 GGATGAGCAGGATAGAAGACTTGCTGAACTCACATCTCAAAGAGCTTTAGAAGC---AGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCG 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTAATAAAACTTATAGAAATAGCACAGGGCAATATTGCCGTGAGTACACTCAAACAGT 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGTCGAGAATTTTCAGCAAAAGGC 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTAGTGGTAGTAACGTAGAATGGCGTAATCCCGATAACGGCAATCATGGCTACGTAAC 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGT 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGCCATTGGTGGTGTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGAT 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCGGTGCCGGCGGTGCATTACTTGGTTCTCAATTCGGCAAAGGTAAAGGGCAACTTGT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (03-APR-2000)
Biology, Institut fuer S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            von Der Schulenburg, J.H., Habig, M., Sloggett, J.J., Webberley, K.M., Bertrand, D., Hurst, G.D. and Majerus, M.E. Incidence of male-killing rickettsia spp. (alpha-proteobacteria) in the ten-spot ladybird beetle adalia decempunctata L Appl. Environ. Microbiol. 67 (1), 270-277 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AJ269517.1 GI:8920294
17 kDa antigen.
17 kDa antigen.
18 Rickettsia from Adalia bipunctata.
19 male-killing Rickettsia from Adalia bipunctata
19 male-killing Rickettsia jalpha subdivision; Rickettsiales;
19 Rickettsiaceae; Rickettsiaee; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                  Muenster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MRI269517

MRI269517

Male-killing Rickettsia from Adalia bipunctata antigen gene (United Kingdom: Cambridge).

AJ269517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schulenburg,H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 434)
            /codon_start=1
/transl_table=11
/product="17 kDA antigen"
/protein_id="CAB96382.1"
/db_xref="GI:9920295"
                                                                                                                                                                                                     /Organism- "Adalia bipunctata
/Specific_host="Adalia bipunctata
/db_xref="taxon:38028"
/Country="United Kingdom: Cambridge"
/Country="United From 2spot ladybird"
db_xref="SPTREMBL:Q9K2N6"
                                                                                                                                                                      /note="PCR primer
                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                  /organism="male-killing
                                                                                                                                                                                                                                                                                                                                                                                                  GERMANY
                                                                                                                                                   .>434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                  Spezielle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 2.1e-06; 0; Mismatches 178;
                                                                                                                                                                                                                                                                                                                                                                                                       Schulenburg H., Department of Evolutionary Spezielle Zoologie, Huefferstr. 1, 48149
                                                                                                                                                                        R1 "
                                                                                                                                                                                                                                                                                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  partial 17kDA
                                                                                                                                                                                                                                                                                                       Adalia bipunctata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BCT 27-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
MRI269518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COCUS
                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     102 TGGGGCTGTTGGTGGTGTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGATCAGCAGGATAAAAATAAAGCTAAAACCAGAGTTTTGGAAAAAGGTAAAAAGCAGGGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGATTGCAGGGCAGAAGCAAGAGATTTTACGGCACTGCATGCCGGCAACCGGATGGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTAGTGGTAGTAACGTAGAATGGCGTAATCCCGATAACGGCAATCATGGCTACGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTG 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTAATAAAACTTATAGAAATAGCACAGGGCAATATTGCCGTGAGTACACTCAAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATGAGCAGGATAGAAGACTTGCTGAACTCACCTCTCAAAGAGCTTTAGAAGC---AGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCGGTGCCGGCGGTGCATTACTTGGTTCTCAATTCGGCAAAGGTAAAGGGCCAACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182;
                                                                                                                                                                                                                                                                                                                   AJ269518 1 GI:8920296
AJ269518.1 GI:8920296
17 kDa antigen.
male-killing Rickettsia from Adalia bipunctata
male-killing Rickettsia from Adalia bipunctata
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsia.
                                                                                                                 Submitted (03-APR-2000)
Biology, Institut fuer S
Muenster, GERMANY
                                                                                                                                                                                                                                                                                                                                                                                                                                               Male-killing Rickettsia from antigen gene (Denmark: Ribe).
                                                                                                                                                                               Schulenburg, H.
                                                                                                                                                                                                                             Bertrand,D., Hurst,G.D. and Majerus,M.E. (alpha-proteobacteria) in Incidence of male-killing riskettsia spp. (alpha-proteobacteria) in the ten-spot ladybird beetle adalia decempunctata L Appl. Environ. Microbiol. 67 (1), 270-277 (2001)
                                                                                                                                                                                                                                                                                                  ٧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MRI269518
                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                 20575219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                (bases 1 to 434)
                                                                                                                                                                                                                                                                                           (bases 1 to 434)
Der Schulenburg, J.H., Habig, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="ALATSMLQACTGPGGMNKOGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGVGALLGAVLGGQIGAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDEQ"
415. . . 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 415. .434
/note="PCR primer R2"
1 88 c 114 g
                             /organism="male-killing Rickettsia
/specific_host="Adalia bipunctata"
/db_xref="taxon:38028"
/country="Denmark: Ribe"
/note="isolated from 2spot ladybird"
                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 62.2; DB 1;
Pred. No. 2.1e-06;
0; Mismatches 178;
                                                                                                                               Schulenburg H., Department of Evolutionary Spezielle Zoologie, Huefferstr. 1, 48149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adalia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                             Sloggett,J.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bipunctata partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434;
                                                                 Adalia
                                                                                                                                                                                                                                                                                                 Webberley, K.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BCT
                                                                 bipunctata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲.
                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                               RESULT 15
AF195118
                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                REFERENCE
                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                 Locus
                                                               JOURNAL
MEDLINE
                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                 AUTHORS
                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                432 ATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135 CGGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   102 TGGGGCTGTTGGTTGGCGGTGTTGGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGC 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                 462 TTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75 TGGCGGTGCCGGCGTGCATTACTTGGTTCTCAATTCGGCAAAGGTAAAGGGCAACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
mes 182; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCG 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTAGTGGTAGTAACGTAGAATGGCGTAATCCCCGATAACGGCAATCATGGCTACGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACACGTTGGCGTAATCCAGATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATGAGCAGGATAGAAGACTTGCTGAACTCACATCTCAAAGAGCTTTAGAAGC----AGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGATCAGCAGGATAAAATAAAGCTAAAACCAGAGTTTGGAAAAGGTAAAAAGCAGGGGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATGGCCATTGGTGGTGCTGTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTAATAAAACTTATAGAAATAGCACAGGGCAATATTGCCGTGAGTACACTCAAACAGT
                                                                                                                                           Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsia; spotted fever group.

1 (bases 1 to 546)

Bouyer, D.H., Stenos, J., Crocquet-Valdes, P., Moron, C.G., Popov, V.L., Zavala-Velazquez, J.E., Foil, L.D., Stothard, D.R., Azad, A.F. and
                                                                                                                                                                                                                                                                              AF195118
Rickettsia felis 17 kDa
AF195118
AF195118.1 GI:11066087
                                                                                                                                                                                                                             Rickettsia felis.
Rickettsia felis
 Walker, D.H.,
                                                                                  spotted fever
Int. J. Syst.
                                                                                                              Rickettsia felis: molecular
                                                 11321078
                                                                                                                                 Walker,D.H.
                                                                                                                                                                                                                                                                                                                                                                                                                    434
                                                                                                                                                                                                                                                                                                                                                                                                                                                   464
        (bases 1 to 546)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                               Syst.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/transl_table=11
/product="17kDA antigen"
/protein_id="CAB96383.1"
/protein_id="820297"
/db_xref="GI=B20297"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="PCR primer R2"
87 c 114 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDEQ"415...434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="SPTREMBL:Q9K2N6"
/translation="ALATSMLQACTGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL
VGVGVGALLGAVLGGQIGAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNHGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="PCR
                                                                               group
Evol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.8%;
                                                                                Microbiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 62.2; DB 1;
Pred. No. 2.1e-06;
0; Mismatches 178;
                                                                                                                                                                                                                                                                                                              genus-common
               Crocquet-Vaides,
                                                                                                                                                                                                                                                                                                                                 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R1 .
                                                                                                               characterization
                                                                                                                                                                                                                                                                                                                                 ф
                                                                               51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                               (Pt
                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                antigen
                                                                               2),
                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 434;
                                                                                                                                                                                                                                                                                                                                linear
                                                                                                               of a
                                                                                                                                                                                                                                                                                                              gene,
                 FOIL, L
```

401

311

371

341

251 281 194

new member of

complete BCT 12-JUN-2001

cds.

(2001)

á В δ В δĀ 망 δÃ В ş В Š В ş

Gaps

221

밁

```
οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 12.2%; Score 59.4; DB 1; Length 546;
Matches 190; Conservative 0; Mismatches 196; Indels 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                506 TGCCGCCAACCTGACGGACTATGGCAAGT 534
                                                                                      442 TGCCGGCAACCGGATGGTCGTTGGCAAGT 470
                                                                                                               446 COTGAGTACACTCAAACAGTTGTAATAGGCGGAAAAACAAAAAAGCATACGGTAATGCA 505
                                                                                                                                      382 CGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGATTTACGGCACTGCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                 386 GGTAATCATGGTTACGTAACACCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGC 445
                                                                                                                                                                                                          322 GTTGAGGCAGTGCGTACCTTACCAGCGTTACAATAAGCAAGAGCGTCGCCAGCAATATTGT 381
                                                                                                                                                                                                                                                   329 AGAGCTTTAGAAGCAACACCTA---GCGGCACTAGCGTAGAATGGCGTAATCCGGATAAC 385
                                                                                                                                                                                                                                                                              262 AAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGGATACAGGCAATAGTTATAGT 321
                                                                                                                                                                                                                                                                                                                      269 GGACAAATAGGTGCAGGTATGGATGAGCAGGATAGAAGACTTGCTGAACTCACTTCACAA 328
                                                                                                                                                                                                                                                                                                                                            202 TCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAAACCAGAGTTTGGAA 261
                                                                                                                                                                                                                                                                                                                                                                                          209 AAGGGCAAAGGACAGCTTGTCGGAGTAGGTGGTAGGTGCATTACTTGGAGCAGTTCTTGGT 268
                                                                                                                                                                                                                                                                                                                                                                                                                142 AAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGTTTTGGGTGGATTAATTGGT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                          149 CAAGGTACGGGAACACTTCTTGGCGGTGCCGGCGGTGCATTACTTGGTTCTCAATTCGGC 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82 CAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTGGCCAGGTGTTTGGT 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
Submitted (14-OCT-1999) Pathology, University of Texas Medical
Branch at Galveston, 301 University Blvd., Galveston, TX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /Codon_start=1
/transl_table=11
/transl_table=11
/product="17 kDa genus-common antigen"
/protein_id="Ange8452.1"
/protein_id="Ange8452.1"
/db_xref="GI:11066088"
/translation="MKLLSKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLG
SQFGKKGQLYGYQVGKALLGAYLGGQIGAGMDEQORKLAELTSQRALEATPSGTSVEW
RNPDNGNHGYVTPNKTYRNSTGQYCREYTGTVVIGGKQQKAYGNACRQPDGLMQVVN"
a 96 c 126 g 141 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Rickettsia felis"
/db_xref="taxon:42862"
65. .544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

뫄 δã Вþ δõ D δõ 밁 Ş В Qγ дЬ

٠,

```
Result
                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Listing first 45
                                                                                                                                                                                                                                                                                                                                                                                                                     Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perfect score:
00000
                                                                                                       0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                    80
80
                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                   seq
119
119
119
119
119
                                                                                                                                                                                                                                                                                                                                                                                                                   length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  us-09-677-374-1
486
                                                                                                                                                         Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13736207 seqs, 6748477542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               October 27, 2002, 20:15:49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atgaacagaggatgtttgca....aagtcatttcaacagaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Copyright
                                                                                                                                                                                                                                                                                                           em_estro:*
em_htc:*
                                                                                                                                                                                                                                             em_gss_hum: *
em_gss_inv: *
em_gss_pln: *
                                                                                                                                                                                                                                                                                                 gb_est1:*
                                                                                                                                                                                                                                                                                                                                                        em_esthum: *
em_estin: *
                                                                                                                                                                                                                                                                                                                              em_estpl:*
                                                                                                                                                                                                                                                                                                                                       em_estov:*
                                                                                                                                                                                                                                                                                                                                                                          em_estba:*
                                                                                                                                                                                                                                                                                                                                               em_estmu:*
                                                                                                                                                                                                                                      em_gss_vrt:*
                                                                                                                                                                                                                                                                        gb_gss:*
                                                                                                                                                                                                                                                                                 gb_htc:*
                                                                                                                                                                                                                                                                                          gb_est2:*
                                                                                                                                                          Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                    2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd
12
9
10
10
10
10
10
                                                                              9
                                                                                               12
12
9
                                                          D BF643947
2 AZ731780
2 CNS06GLH
AJ003546
0 T59966
0 AW151916
2 AZ952777
AI965711
                                                                                                                                       BB517742
                                                                                                                                                          ij
       AZ887587
BM091630
BM092634
BM083068
BI474188
BM160573
                                                                                                                                                                                                                                                                                                                                                                                                   summaries
                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                              parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (without 6736.842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search time 973.679 Seconds without alignments)
736.842 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                              27472414
                                                T59966 yb67e08.rl
AW151916 xf72906.x
AZ952777 2W0217C15
AI965711 sc77e04.y
AZ887587 RPCI-24-1
                                                                                            BE428593 MTD008.G0
BF643947 NF026G01E
AZ731780 RPCI-24-1
AL397851 T3 end of
AJ003546 AJ003546
              BM091630 sag99e06.
BM082634 fu23h09.y
BM083068 fu28h07.y
BI474188 fp36b02.y
                                                                                                                                        BB517742 BB517742
                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            486
        EST563096
                                                                                                                                               TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                     RESULT 1
BB517742
                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ဂ ဂ
                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                    BB517742.2
EST.
                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                         Muramatsu, M. and Hayashizaki, Y.
                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                          house mouse.
                                                                                                                                                                                                                                    (bases 1 to 661)
                                                                                     81-45-503-9216
                                                                                                                                                                                                                                               Eutheria;
                                                                                                                                                                                                                                                                                           GI:16443203
                                                                                                                                                                                                                                               Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
```

18	18	T &	. 18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	19	19	19
٠				3.7								٠	٠	٠		٠				٠				٠			
492	491	485	484	479	469	468	466	463	436	424	417	408	407	379	373	359	286	284	276	214	200	200	200	163	1295	1179	852
9	¥	v	10	10	10	9						12	12	10	10	10	9	9	9	9	9	9	9	9	10	10	12
AI463386	AW449278	AV84 / / 06	BG067771	BG202620	C87441	AW221110	AW123846	BE335854	N81359	BF223697	BE672478			BE952725	н81695	BE949717		BB198207	48055	41604	82080	20597	597	AI081506	0653	BG114834	74245
AI463386 uc39f01.x	ID	AV84		BG202620 RST21983	287441	EST2	UI- }	BE335854 us23f12.x	rgESTzy45b	7 7q34e02	3 7a57d0	RPCI-23-	10 HS_502	25 UI-M-B	УS	7) r3f10a	7 BB19820		5 BB41604	5 qg26h12.	7 qg26h12.	5 qg26h11.	5 oz53h06.	36 60361549	34 6	55 HS_5383_

Email: genome-res@gsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp/
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
,M., Konno,H., Okazaki,Y., Muzamatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura
,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Arakawa, T., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hiramoto, K., Hori, F., Ishii, Y., Ito, M., Kawai, J., Konno, H., Kouda, M., Koya, S., Matsuyama, T., Miyazaki, A., Nomura, K., Ohno, M., Okazaki, Y., Okido, T., Saito, R., Sakai, C., Sakai, K., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Suzuki, H., Tagawa, A., Takahashi, F., Takeda, Y., Tanaka, T., Toya, T., Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Jaj
Tel: 81-45-503-9222 RIKEN Mouse ESTs (Arakawa,T., et al. 2001)
Unpublished (2001)
On Jul 28, 2000 this sequence version replaced g1:9569200
Contact: Yoshihide Hayashizaki BB517742 RIKEN full-length enriched, 16 BB517742 RIKEN full-length enriched, 16 musculus cDNA clone D830025004 3', mRNA BB517742 Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus Yokohama, Kanagawa 230-0045, Japan A linear E 5 days neonate l A sequence. EST 25-OCT-2001

```
REFERENCE
                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                    RESULT 2
BE428593/c
                                                                                                                                                     KEYWORDS
                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                           VERSION
     .:
•••
                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                       171 TGGTGGTGCTGTTTTGGGTGG 191
                                                                                                                                                                                                                                                                                                       TGGTGGTGCTGTTTTGGGTGG 525
                         Triticum turgidum subsp. durum
Eukaryota; Viridiplantae; Streptophyta; En
Spermatophyta; Magnoliophyta; Liliopsida;
Triticeae; Triticum.
1 (bases 1 to 395)
            Anderson, O.A., Appels, R., Bailey, P.,
                                                                                                                                                       EST
                                                                                                                                                                BE428593

395 bp mRNA linear EST 26-JUL-2000 turgidum subsp. durum cDNA clone MTD008.G05, mRNA sequence.
                                                                                                                             durum wheat.
                                                                                                                                                              BE428593.1
                                                                                                                                                                                                                                                                                                                                                                          Similarity 100.
21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN.

Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human Genome Sequences Mamm. Genome. 12, 673-677 (2001) Please visit our web site (http://genome.gsc.riken.go.jp/) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Computer based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) K. Fukuda, S., Shinagawa, A., Saito, T., Kiyosawa, H., Yamanaka, L., Aizawa Hawashi, J., Hara, A., Itoh, M., Kawai, J., Shibata, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Computational Analysis of Full-Length Mouse cDNAs Compared with Human Genome Sequences Mamm. Genome. 12, 673-677 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hayashizaki,y.

RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y and Hayashizaki, Y
                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Site_1: Sal; Site_2: BamHI; cDNA library was Prepared and sequenced in Mouse Genome Encyclopedia Genomic Sciences Center and Genome Science Laboratory in Riken RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was
                                                                                                                                                          GI:9426436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="heart"
/dev_stage="16 days neonate"
/lab_host_"DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="RIKEN full-length enriched, 16 days neonate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="D830025004"
                                                                                                                                                                                                                                                                                                                                                                 4.3%;
100.0%; Pr
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      757-1771 (2000)
Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara
                                                                                                                                                                                                                                                                                                                                                                                     Score 21;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                DB 9;
Blake,T., Close,T., Cloutier
                                               Embryophyta; Tracheophyta;
a; Poales; Poaceae; Pooideae
                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                           Length 661;
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                 0;
```

7,

Дb δ

```
FEATURES
                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF643947/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γQ
                                                                                                                                                                                                                                                          JOURNAL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   116 GCGGTGTTGCTGGCCAGCTG 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48 GCGGTGTTGCTGGCCAGCTG 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                          Plant Biology Division
The Samuel Roberts Noble Foundation
2510 Sam Noble Parkway, Ardmore, OK 73402, USA
Tel: 580 221 7302
Fax: 580 221 7380
                                                                 Unpublished (2000)
Contact: Dixon RA
                                                                                                                                                                                                                                             Torres-Jerez,I., Scott,A.D., Harris,A.R., Gonzale Flores,H.R., Inman,J.T., Weller,J.W. and May,G.D. Expressed Sequence Tags from the Samuel Roberts N. Center for Medicago Genomics Research
                                                                                                                                                                                                                                                                                                                           Medicago Truncatula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
Rosidae; eurosids I; Fabales; Fabaceae; Papillonoideae; Trifolieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DE043947
NF025601EC1F1005 Elicited 673 bp mRNA linear EST 20-
clone NF025G01EC 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                       barrel medic
                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF643947.1 GI:11909076
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF643947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Joudrier P
INRA, Unite de Blochimie et Biologie Moleculaire des Cereales
2, place VIALA, 34060 Montpellier cedex 01 FRANCE
Tel: 33 4 99 61 23 84
Fax: 33 4 99 61 23 48
Email: joudrier@ensam.inra.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://wheat.pw.usda.gov/genome.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         As a Dubcovsky, J., Feuillet, C., Gale, M., Graner, A., Gustafson, P., Herrmann, R.G., Holton, T., Jacquemin, J.M., Jia, J., Joudrier, P., Lazo, G.R., Lin, J.J., McGuirer, P., Ogihara, Y., Pecchioni, N., Qualset, C., Schuch, W., Selvaraj, G., Shariflou, M., Sorrells, M., Warburton, M. and Wenzel, G.
International Triticeae EST Cooperative (ITEC): Production of Expressed Sequence Tags for Species of the Triticeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: joudrier@ensam.inra.fr
International Triticeae EST Cooperative (ITEC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98 a
/organism="Medicago truncatula"
/db_xref="taxon:3880"
                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /Clone_lib="TIEC WID Durum Wheat Root Library"
/tissue_type="root"
/dev_stage="3-day-old seedling, water-stressed"
/note="vector: pSpORT1; T7 primers used. See pSPORT1
Polylinker site. 0.3-2.0 Kbp average insert size."

111 c 114 g 72 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /Organism="Triticum turgidum subsp. durum"
| Cultivar="Siliana"
| /db_xref="taxon:4567"
| /clone="MTD008_G05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 20; Pred. No.
                                                                                     Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                                                                                                                                                                                                                                     Roberts Noble Foundation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                    Gonzales, R.A., Bell, C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

ķ

Š

```
RESULT 4
AZ731780/c
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               343 ATCAGCAGGATAAAATAAAG 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      224 ATCAGCAGGATAAAATAAAG 243
                                                                                                                                                                                                                                                                                                                                                                     Clones are derived from the mouse BAC library RPCI-24. For BAC library availability, please contact Pieter de Jong (pdejong@mail.cho.org). Clones may be purchased from BACPAC Resources (http://www.chori.org/bacpac/orderingframe.htm). BAC page: http://www.tigr.org/tdb/bac_ends/mouse/bac_end_intro.html plate: 128 row: C column: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AZ731780
RPCI-24-128C18.TJ RPCI-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhao, S., Nierman, W., Malek, J., Shatsman, S., Al
Tsegaye, G., Geer, K., Krol, M., Shvartsbeyn, A.,
Russell, D., de Jong, P. and Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mouse BAC End Sequences from Library RPCI-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
1 (bases 1 to 689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: szhao@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nouse mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA sequence.
                                                                                                                                                                                                                                                                                                                                  primer: SP6
ss: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175
                   166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Elicited cell culture"
/tissue_type="Cell cultures derived from root tissues"
/dev_stage="Cell suspensions were subcultured every 14
days. Cells were induced six days after subculture"
/note="Vector: Lambda Zap; Cells were induced with yeast
cell wall extracts equivalent to 50ug/ml glucose in the
final concentration. Samples were taken at 0.5, 1, 12 and
24 hours after induction. Equal amounts of RNA from each
time point were pooled and used for mRNA isolation."
a 151 c 127 g 220 t
                                                    /cell_type="Spleen/Brain"
/note="Vector: pTARBAC1; Site_1: BamH1; Site_2: BamH1;
/note-"Vector: pTARBAC1; Site_1: BamH1; Site_2: BamH1;
RPCIT-24 Mouse BAC Library produced by Pieter de Jong.
library was cloned in the pTARBAC1 cloning vector at
library was cloned in the pTARBAC1 digested male C57BL/
BamH1 sites using MboI partially digested male C57BL/
                                                                                                                                                                                                                                               /organism-"Mus musculus"
/strain-"C57BL/6J"
                                                                                                                                                                                                                                                                                         1. .689
                                                                                                                                                                                  /db_xref="taxon:10090"
/clone="RPCI-24-128C18"
/clone_lib="RPCI-24"
                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                   /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="NF026G01EC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:12494163
                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.1%;
                   O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 20;
Pred. No.
                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                689 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shatsman, S., Akinret, B., Levins, M.,
                   205 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10;
7.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GSS 25-JAN-2001
RPCI-24-128C18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                   end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

Query Match

4.18;

Score

20;

DB 12;

Length 689;

SOURCE

Locus

```
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CNS06GLH/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
Query Match 4.1%; Sometimes Substitution 4.1%; Sometimes 4.1%; Sometimes 4.1%; Sometimes 4.1%; Sometimes 4.1%; Sometimes 5.1%; Sometimes 4.1%; Sometimes 5.1%; Sometimes 5.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 20; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          543 GCAGGGCAGAAGCAAGAGAT 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGGCAGAAGCAAGAGAT 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saurin, W., Tekaia, F., Toffano-Nioche, C., Wesolowski-Louvel, M., Wincker, P. and Weissenbach, J. Genomic exploration of the hemiascomycetous yeasts: 1. A set of yeast species for molecular evolution studies
FEBS Lett. 487 (1), 3-12 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CNS06GLH 988 bp DNA linear GSS 1
T3 end of clone AS0AA005E09 of library AS0AA from strain
of Saccharomyces bayanus, genomic survey sequence.
AL397851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (07-SEP-2000) Genoscope - Centre National de Sequencage, 2 rue Gaston Cremieux, CP 5706, 91057 EVRY cedex, FRANCE. (E-mail: segrefgenoscope.cns.fr - Web: www.genoscope.cns.fr)
This GSS is part of a random genomic sequencing program of thirteen yeast species: Saccharomyces bayanus var. uvarum, Saccharomyces exiguus, Saccharomyces servazzii, Zygosaccharomyces rouxii, Saccharomyces kluyveri, Kluyveromyces thermotolerans, Kluyveromyces saccharomyces kluyveri, Kluyveromyces thermotolerans, Kluyveromyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lactis var. lactis, Kluyveromyces marxianus var. marxianus, Pichia angusta, Debaryomyces hansenii var. hansenii, Pichia sorbitophila, Candida tropicalis and Yarrowia lipolytica. Genomic inserts of 3 to 5 kb were prepared and both extremities were sequenced. See keywords for description of this sequence and for the sequence of the other extremity of this insert.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Souciet, J.L., Aiglė, M., Artiguenave, F., Blandin, G.,
Bolotin-Fukuhara, M., Bon, E., Brottier, P., Casaregola, S.,
de-Montign, J., Dujon, B., Durrens, P., Lepingle, A., Llorente, B.,
Malpertuy, A., Neuveglise, C., Ozier, Kalogeropoulos, O., Potier, S.,
Malpertuy, A., Neuveglise, C., Ozier, Kalogeropoulos, O., Potier, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genomic exploration of the hemiascomycetous yeasts: 5. Saccharomyces bayanus var. uvarum FEBS Lett. 487 (1), 37-41 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bon, E., Neuveglise, C., Aigle, M. and Durrens, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL397851.1 GI:12150837 GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20584715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saccharomyces bayanus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomyces bayanus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20584711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                       /clone_lib="ASOAA"
/note="end : T3"
<160. .>978
/note="similar to Saccharomyces cerevisiae
PTP3 ; protein tyrosine phosphatase ]"
                                                                                                                                                                                                 evidence-not_experimental 253 c 162 g 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:4931"
/clone="AS0AA005E09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /variety="uvarum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /strain≖"CLIB 533"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Saccharomyces"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
Score 20; DB; Pred. No. 8.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Casaregola, S., Artiguenave, F., Wincker, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                         DB 12;
. 8.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bayanus"
        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                              Length 988;
    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                             ORF YER075c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
    0
    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

γQ

```
COMMENT
                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                    RESULT
T59966
                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                   TITLE
                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AJOO3546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                         406 ATTGCAGGGCAGAAGCAAG 424
                                                                                                                                                                                                                                                                                                                                                                                                      37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     622
                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Butheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 380)

Chisses; L. Lennon,G., Becker,M., Bonaldo,M.F., Chiapelli,B., Chissoe,S., Dietrich,N., DuBuque,T., Favello,A., Gish,W., Hawkins, M., Kucaba,T., Lacy,M., Le,M., Le,N., Mardis,E., Moore Schellenberg,K., Saares,M.B., Tan,F., Thierry-Meg,J., Trevaskis,E., Cennome, R.S., Wohldman,P., Waterston,R., Wilson,R. and Warra,M. Genome Res. 5 (9), 807-828 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251 AGAGTTTGGAAAAGGTAAAA
            Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis,
Tel: 314 286 1800
                                                                                                                                                                                                                                                                                                                                                                                            ATTGCAGGGCAGAAGCAAG 55
                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                            T59966.1 GI:661803
                                                                                                                                                                                                                                                                               T59966
T59966
380 bp mRNA linear EST 09-FEB-1995
IMAGE:76262 5' similar to Sp:TCPD_MOUSE P80315 T-COMPLEX PROTEIN 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGTTTGGAAAAGGTAAAA 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Yaspo, M.-L.
Max Planck Institut fuer Molekulare Genetik
Ihnestrasse 73, D14195 Berlin-Dahlem, Germany.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H. and Yaspo,M.L.H. An integrated transcript map for Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 376)
Szulzewsky, I., Hunt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryola; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
Homo sapiens
314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AJ003546 Selected chromosome 21 c clone MPIP112-9K8, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AJ003546.1 GI:2578219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   106 a
                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="Selected chromosome
81 c 81 g 103 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="MPIp112-9K8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
/map="21q"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ...Hunt,E., Nguyen,M., Korn,B., Roehrdanz,B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    270
                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp mrNA linear EST 04-DEC 21 cDNA library Homo sapiens cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 9;
25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      whole human chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
              MO 63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 04-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                     FEATURES
                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
AW151916/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
```

В

δÃ

j'

/clone_lib="NCI_CGAP_Gas4"

```
247 AACCAGAGTTTGGAAAAGG 265
                                                                                                     Emmert-Buck, M.D., Ph.D.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: Greg Lennon, Ph.D.

DNA Sequencing by: Washington University Genome Sequencing Center

Clone distribution: NCI-CGAP clone distribution information can be
                                                                                                                                                                                                  Possible reversed clone: polyT not Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACCAGAGTTTGGAAAAGG 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D.,
                                                                                                                                                                                                                                                                                                    www-bio.llni.gov/bbrp/image/image.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mammaila; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 436)

NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tumor Gene Index
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
AW151916
AW151916.1 GI:6199901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AW151916
xf72g06.xl NCI_CGAP_Gas4 Homo sapiens cDNA clone IMAGE:2623642 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AW151916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 100.
19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: est@watson.wustl.edu
Insert Size: 1282
High qality sequence stops: 257 Source: IMAGE Consortium, LLNL Th
clone is available royalty-free through LLNL; contact the IMAGE
Consortium (info@image.llnl.gov) for further information.
Insert Length: 1282
Seq primer: M13RP1
Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop: 257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  104
/clone="IMAGE:2623642"
                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="49 year old"
/lab_host="SQUR cells (kanamycin resistant)"
/note="norgan: ovary; Vector: Bluescript Sk; Site_1: EcoRI;
Site_2: XhoI; Cloned unidirectionally. Primer: Oligo dT.
Total ovary tissue, normal, caucasian. Average insert
size: 0.8 kb, Uni-ZhP XR Vector; -5, adaptor sequence: 5, CTCGAGTTTTTTTTTTTTTTTTT 3, adaptor sequence: 5, adaptor sequence: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Organism="Homo sapiens"
/db_xref="GDB:505991"
/db_xref="taxon:9606"
/clone="!MAGE:76262"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="Stratagene ovary (#937217)"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                        found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LLNL This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

١

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        299 CAGATACAGGCAATAGTTA 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGATACAGGCAATAGTTA 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert B. Weiss
University of Utah Genome Center
University of Utah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Similarity
19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AZ952777

461 bp DNA linear 2M0217C15R Mouse 10kb plasmid UUGC2M library Musclone UUGC2M0217C15 R, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: CACACAGGAAACAGCTATGACC Class: plasmid ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Erry
Plate: 0217 row: C column: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plasmid inserts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dunn,D., Aoyagi,A., Bar
Islam,H., Longacre,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mouse whole genome scaffolding with paired
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Wright, D., Weiss, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nouse mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mmalia; Eutheria; (bases 1 to 461)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     308,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                quality sequence stop: 461.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          801 585 5606
801 585 7177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,D., Aoyagi,A., Barber,M., Beacorn,T., Duval,B., Hamil,C.,n,H., Longacre,S., Mahmoud,M., Meenen,E., Pedersen,T., ReillyRose,M., Rose,R., Stokes,R., Tingey,A., von Niederhausern,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.9%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with T4 DNA polymerase and T4 polynucleotide kinase. Adaptor oligonucleotides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-"Organ: stomach; Vector: pCMV-SPORT6; Site_1: SalI; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.69 kb. Life Technologies catalog #: 11549-011"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="poorly differentiated adenocarcinoma with
signet ring cell features"
/lab_host="DH10B"
                                                                                                                                                                                                      musculus C57BL/6J (female) was obtained from the Jackson Laboratory Mouse DNA Resource (http://www.jax.org/resources/documents/dnares/). The DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biomedical Polymers Research Bldg., 20 S. 2030 E., SLC, UT
                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="UUGC2M0217C15"
                                                                                                                                                                                                                                                                                    /note-"Vector: PWD42nv; Purified genomic
                                                                                                                                                                                                                                                                                                       /lab_host="E. coli strain XL10-Gold, T1-resistant,
                                                                                                                                                                                                                                                                                                                                      /sex="Female"
                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Mouse 10kb plasmid UUGC2M library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:13824004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ore 19; DB 9
red. No. 25;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        end reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           musculus genomic
                                                                                                                                                                                                                                                                                    DNA from M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS 27-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Reilly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

REFERENCE

AUTHORS

JOURNAL TITLE SOURCE KEYWORDS

ORGANISM

VERSION ACCESSION

FEATURES

RESULT 9 AZ952777

DEFINITION

LOCUS

В δô BASE COUNT ORIGIN

Matches

```
RESULT 10
AI965711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     413 TTGGTGGTGCTGTTTTGGG 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGGIGGIGCIGITITIGG 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shoemaker, R., Keim, P., Vodkin, L., Erpelding, J., Coryell, V., A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., R., Waterston, R. and Wilson, R., Waterston, R. and Wilson, R., Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AI965711 545 bp mRNA linear EST 30-NOV-2 sc77e04.yl Gm-c1018 Glycine max cDNA clone GENOME SYSTEMS CLONE Gm-c1018-919 5' similar to TR:080558 080558 T22J18.21 PROTEIN.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: est@watson.wustl.edu
Possible reversed clone: similarity on wrong strand This clone is
available through: ResGen, Invitrogen Corp. 2130 South Memorial
Parkway Huntsville, AL 35801 For further information call: (800
)-533-4363 or contact via email: ccu@resgen.com
High quality sequence stop: 421.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Public Soybean EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fabales; Fabaceae; Papilionoldeae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              soybean.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AI965711.1 GI:5760420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Shoemaker R/Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 545)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of pWD42 (g114732114|gb|AF129072.1), a copy-number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to adaptored vector DNA, and transformed into chemically-competent E. coli XL10-Gold (Stratagene) cells and selected for ampicillin resistance."
synthesized from mRNA using a primer consisting of a poly (dT) sequence with a XhoI restriction site. EcoRI adapter: were ligated to the blunt-ended cDNA fragments followed by XhoI digestion. The cDNA fragments were directionally
                                                                                                                                                                              /tissue_type="leaves of greenhouse grown plants"
/dev_stage="2-3 weeks old"
/lab_host="DH10B (Gibco BRL)"
/note="Vector: pBluescript II XR; Site_1: EcoRI; Site_2:
XhoI; This ODNA library was constructed from mRNA isolated
                                                                                                    from 2–3 week old greenhouse grown plants.The cDNA library was prepared using the Stratagene pBluescript II XR library construction kit. Complementary DNA was
                                                                                                                                                                                                                                                                                                                   /clone="GENOME SYSTEMS CLONE ID: Gm-c1018-919"
/clone_lib="Gm-c1018"
                                                                                                                                                                                                                                                                                                                                                                       /organism="Glycine max"
/db_xref="taxon:3847"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.9%; J.
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Harvey, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 30-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                           followed by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bowers, Schurk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           McCann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Beck,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Khanna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

В ş

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
AZ887587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
170 TTGGTGGTGCTGTTTTGGG 188
                                                                                                                                                                                                                                                                                                                             source
                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 GTTTTGGGTGGATTAATTG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1995)
Other_GSSs: RPCI-24-166M15.TV
Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MI
Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTTTGGGTGGATTAATTG 324
                                l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                        Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                               library availability, please contact Pieter de Jong (pdejong@mail.cho.org). Clones may be purchased from BACPAC Resources (http://www.chori.org/bacpac/orderingframe.htm). BAC page: http://www.tigr.org/tdb/bac_ends/mouse/bac_end_intro.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: szhao@tigr.org
Clones are derived from the mouse BAC library RPCI-24. For BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zhao, S., Nierman, W., Malek, J., Shatsman, S., Akinret, B., Tsegaye, G., Geer, K., Krol, M., Shvartsbeyn, A., Gebregeorg Russell, D., de Jong, P. and Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mouse BAC End Sequences from Library RPCI-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RPCI-24-166M15.TJ RPCI-24 Mus mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZ887587.1 GI:13206532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 550)
                                                                                                                126
                                                                                                                                                                                                                                                                                                                                                                           primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                               /strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="RPCI-24-166M15"
                                                                                                                                                                                                                             /sex="Male"
                                                                                                                                                                                                                                           /clone_lib="RPCI-24"
                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                        location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cloned into the EcoRI-XhoI restriction site of the pBluescript vector. The ligated cDNA fragments were transformed into DH10B host cells (Gibco BRL). This library was constructed by Dr. Randy Shoemaker and Dr. John Erpelding."
                                                                                                                                                                                                                                                                                                                             . 550
                                                                                                                                                                                                                                                                                                                                                                                        row: M column:
                                               3.9%;
100.0%;
                                                                                                             155 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.9%;
                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 19; DB of Pred. No. 27; O; Mismatches
                                                                                                           123 g
                                               Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                              Mismatches
                                                                                                             146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp DNA linear GSS אות musculus genomic clone RPCI-24-166M15
                                          DB 12;
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9;
                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                         Length 550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gebregeorgis, E.,
                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                  BAC end
                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

1 8

밁 δÃ

Matches

Conservative

0;

Mismatches

0;

0;

Gaps

0;

181 GTTTTGGGTGGATTAATTG 199

22

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BM091630
LOCUS
                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TIGGIGGIGCIGITIIGG
l Similarity
19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This clone is available through: ResGen, Invitrogen Corp. South Memorial Parkway Huntsville, AL 35801 For further is call: (800)-533-4363 or contact via email: ccu@resgen.com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shoemaker, R., Keim, P., Vodkin, L., Erpelding, J., Coryell, V., Khanna, A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, M., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R. and Wilson, R.

Public Soybean EST Project
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 421.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Public Soybean EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Shoemaker R/Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fabales; Fabaceae; Papillonoideae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BM091630 561 bp mRNA linear EST 29-NOV-20 sag99e06.yl Gm-c1086 Glycine max cDNA clone GENOME SYSTEMS CLONE ID: Gm-c1086-203 5' similar to TR:Q9T0C8 Q9T0C8 PUTATIVE PHOSPHORIBOSYLANTHRANILATE TRANSFERASE.; mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            soybean
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BM091630
BM091630.1 GI:17020596
                                                                                                                                     126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 561)
                                                                                                           //note="Westor: pBluescript II SK+; Site_1: EcoRI; Site_2: XhoI; The cDNA library was constructed from mRNA isolated from very young seeds (less than 20mgs). The library was prepared using the Stratagene pBluescript II SK (+) library construction kit. Complementary DNA was synthesized from mRNA using a primer consisting of a poly(dT) sequence with an Xho I restriction site. Eco RI adaptors were ligated to the blunt-ended cDNA fragments followed by Xho I digestion The cDNA insert is protected from Xho I digestion via methylation during first strand cDNA sythesis. The cDNA fragments were directionally cloned into the Eco RI-Xho Irestriction site of the pBluescript vector. The ligated cDNA fragments were transformed into E.coli ElectroMax DHIOB host cell. The library was constructed by Anu Khanna (Lila Vodkin lab, University of Illinois)."
                                                                                                                                  þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Glycine max"
/db_xref="taxon:3847"
/clone="GROME SYSTEMS CLONE ID: Gm-c1086-203"
/clone_Lib="Gm-c1086"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="young seeds (Williams 82)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                      3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231
                   Score 19;
Pred. No.
                      DB 10;
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          information
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                  RESULT 14
BM083068/c
                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                вм082634/с
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240 ANAGCTAAACCAGAGTTTG 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGCTAAACCAGAGTTTG
   BM083068.1
BM083068.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clark, M., Johnson, S.L., Lehrach, H., Lee, R., Li, F., Marra, M., S., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Un, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Rittels, S., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Rittels, S., Rittels, R., Carlottels, R., Carlo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA Library constructed by Library constructed by Invitrogen and donated by R. Campbell (Marine Biology Laboratory, Woods Hole, MA DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: the I.M.A.G.E. Consortium/LLNL, send email to
                                                                                                                                                      fu28h07.yl
5′ similar
                                                                                                                                                                                                                                      BM083068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Stephen L. Johnson
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniform; Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BM082634 582 bp mRNA linear EST 14-NOV-2001 fu23h09.yl Campbell zebrafish ovary Danio rerio cDNA clone 5306345 5' similar to TR:Q9Y6R2 Q9Y6R2 EMBRYONIC LUNG PROTEIN. ;, mRNA
                                                                                                                   sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: zbrafish@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WashU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kohn, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM082634.1 GI:16929564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 info@image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               zebrafish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 582)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              quality sequence stop: 440 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zebrafish EST Project 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ., Shin,T., Jackson,Y., Cardenas,M., McCann,R., Waterston,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="4-5 months, 1 year and 2 years"
/lab_host="DH10B (phage-resistant)"
/note="Organ: ovary(pooled); Vector: pCMV-SPORT6; Site_1:
NotI; Site_2: SalI; Whole ovaries collected from zebrafish
aged 4-5 months, 1 year and 2 years. Oligo-dT primed,
directionally cloned. Average insert size 2 kb. Library
constructed by invitrogen and donated by R. Campbell
(Marine Biology Laboratory, Woods Hole, MA)."
a 145 c 137 g 133 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:7955"
/clone="5306345"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="Campbell zebrafish ovary"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Danio rerio"
                                                                                                                                              584 bp mRNA linear EST 14-NOV Campbell zebrafish ovary Danio rerio cDNA clone 530 to TR:09Y6R2 Q9Y6R2 EMBRYONIC LUNG PROTEIN. ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 19; DB 10;
Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Person, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     send email to:
                                                                                                                                                                                          EST 14-NOV-2001
A clone 5306748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 14-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cypriniformes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ritter, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Underwood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                   Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                        BI474188/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGCTAAACCAGAGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGCTAAACCAGAGTTTG 258
                                                                                                                                                                                                                                                                                                                                                            fp36b02.y3
5′ similar
i (bases 1 to 585)
Clark, M., Johnson, S.L., Lehrach, H., Lee, R., Li, F., Marra, M., Eddy
S., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylle, T., Underwood
K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B.,
Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 584)
Clark, M., Johnson, S.L., Lehrach, H., Lee, R., Li, F., Marra, M., Eddy
, S., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwoo
, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B.,
Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E.,
Swaller, T., Gibbons, M., Pape, D., Harvey, N., McCann, R., Waterston, R.,
Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA Library constructed by Library constructed by Invitrogen and donated by R. Campbell (Marine Biology Laboratory, Moods Hole, MA) DNA Sequencing by: Washington University Genome Sequencing Center Clone distribution: the I.M.A.G.E. Consortium/LLNL, send email to:
                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniform
                                                                                                                                                                                                             Danio rerio
                                                                                                                                                                                                                                                              EST
                                                                                                                                                                                                                                                                                                                                                                                                                BI474188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence stop: 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4444 Forest Park Parkway, Box 8501, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Stephen L. Johnson Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1998)
Other_ESTs: fu28h07.x1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WashU Zebrafish EST Project 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 zebrafish
                                                                                                                                                                                                                                       zebrafish
                                                                                                                                                                                                                                                                                      BI474188.1
                                                                                                                                                                                                                                                                                                                                          sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: zbrafish@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                info@image.llnl.gov
                                                                                                                                    Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="4-5 months, 1 year and 2 years"
/lab_host="DH10B (phage-resistant)"
/note="Organ: ovary(pooled); Vector: pCMV-SPORT6: Site_1:
NotI; Site_2: SalI; Whole ovaries collected from zebrafish
aged 4-5 months, 1 year and 2 years. Oligo-dT primed,
directionally cloned. Average insert size 2 kb. Library
constructed by Invitrogen and donated by R. Campbell
(Marine Biology Laboratory, Woods Hole, MA)."
a 149 c 136 g 129 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism-"Danio rerio"
/db_xref="taxon:7955"
/clone="5306748"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Campbell zebrafish ovary"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                            585 bp mRNA linear EST 27-
zebrafish gridded kidney Danio rerio cDNA clone
to TR:Q9Y6R2 Q9Y6R2 EMBRYONIC LUNG PROTEIN. ;, m
                                                                                                                                                                                                                                                                                        GI:15303352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.9%; Score 19;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>₹</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                EST 27-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                         Cypriniformes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Underwood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
Search completed: October 27, 2002, 22:36:36
Job time : 978.679 secs
                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
COMMENT
                                                                                                                                              Ouery Match

Sest Local Similarity 100.0%; Score 19; DB 10; Length 585; Matches 19; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         And Wilson, F., Jackson, Y., Cardenas, M., McCann, R., Waterston, R.
WashU Zebrafish EST Project 1998
Unpublished (1998)
Contact: Stephen L. Johnson
4444 Forest Park Parkway, Box 8501, St. Louis, MC 63108, USA
Fal: 314 286 1800
Fax: 314 286 1800
Email: zbrafish@watson.wustl.edu
cDNA Library Preparation: Leonard Ira Zon DNA Sequencing by:
Genome Systems, St. Louis, Missouri (web address:
Research Genetics, Huntsville, Alabama (web address: www.resgen.com) and
) (email contact: info@tesgen.com) and
RessourcenZentrumPrimarDatenbank, Berlin, Germany (web address:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence stop: 320.
Location/Qualifiers
1. 585
                                                                                                                                                                                                                                                                  161 a
                                                                                                                                                                                                                                                            /note="Organ: kidney; Vector: pBK-CMV; Site_1: EcoRI; Site_2: XhOI; Oligo dT cDNA library constructed from mRNA zebrafish." pooled kidney tissue from 300 adult a 140 c 136 g 146 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Danio rerio"
/db_xref="taxon:7955"
/clone="4745043"
/clone_lib="zebrafish gridded kidney"
/sex="mixed"
                                                                                                                                                                                                                                                                                                                                                      /tissue_type="kidney pooled from 300 wild type adults"
//ab_host="XLOLR"
                                                                                                                                                                                                                                                       136 g
                                                                                                                                                                                                                                                   146 t
                                                                                                                                                                                                                                            2 others
                                                                                                                                              0;
                                                                                                                                       Gaps
                                                                                                                                       0;
```

₽. Ş

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Listing first 45 summaries
                                                                                                                               0 0 0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                         00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.:
         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length:
seq length:
     nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383533 segs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OLIGO_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-677-374-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    October 27, 2002, 20:19:49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgaacagaggatgtttgca.....aagtcatttcaacagaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
                                                                                                                                                                                                                                                                    2165
2165
2340
2775
2802
2802
51952
4403765
1632
1632
1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000000000
                                                         3429
4234
4234
4234
4234
4234
4234
4868
4868
5703
8789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                  US-08-742-877-3
US-09-053-871A-22
US-08-947-823-1
US-08-947-823-1
US-07-959-941-1
US-07-959-941-1
US-08-916-677-11
US-08-946-994-10
US-08-946-994-10
US-08-946-994-10
US-08-446-010B-1
US-08-446-010B-1
US-08-446-010B-1
US-08-446-010B-1
US-08-066-208-1
US-08-066-208-1
US-08-066-208-1
US-08-139-937-12
US-09-066-208-1
US-08-33-11310-12
US-09-280-590A-36
US-09-280-590A-36
US-08-353-700-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  chosen
                                                                                                                                                                                                                                                                                                                                                                                                             US-08-985-908-23
US-08-162-809-7
US-08-669-721-2
US-09-189-344-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (without 3307.484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Search time 36.0933 without alignments) 307.484 Million cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  767066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                      Sequence 1, A
Sequence 1, A
Sequence 2,
                                                     Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                              Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell updates/sec
                      Sequence
                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seconds
7, Appli
2, Appli
3, Appli
3, Appli
1, Appli
2, Appli
3, Appli
3, Appli
4, Appli
6, Appli
6, Appli
7, Appli
7, Appli
8, Appli
8, Appli
9, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               486
                                                                      ; FEATURE:
; NAME/KEY:
; LOCATION:
US-08-985-908-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1
US-08-985-908-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 23, Application US/08985908 Patent No. 6004773 GENERAL INFORMATION:
 Query Match 3.7%; So
Best Local Similarity 100.0%; F
Matches 18; Conservative 0;
                                                                                                                                                                             MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 22202
                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: ARLINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                  linear
```

28 15 3.1 29 1 US-08-429-523-9 31 15 3.1 177 1 US-08-429-523-9 32 15 3.1 177 1 US-08-429-523-9 33 15 3.1 177 1 US-08-429-523-9 34 15 3.1 177 1 US-08-429-523-9 35 15 3.1 177 1 US-08-429-523-9 36 15 3.1 177 1 US-08-429-523-9 37 15 3.1 177 1 US-08-429-520-9 38 15 3.1 177 1 US-08-429-520-9 39 15 3.1 177 1 US-08-429-520-9 30 15 3.1 177 1 US-08-429-520-9 31 15 3.1 177 1 US-08-429-520-9 32 15 3.1 177 1 US-08-429-520-9 33 15 3.1 177 1 US-08-429-520-9 34 15 3.1 177 1 US-08-429-520-9 35 15 3.1 177 1 US-08-429-520-9 36 15 3.1 177 1 US-08-429-520-9 37 15 3.1 177 1 US-08-628-670-69 38 15 3.1 249 1 US-08-286-670-279-38 40 15 3.1 249 1 US-08-286-676-279-38 41 15 3.1 354 2 US-08-688-151A-58 42 15 3.1 379 4 US-09-037-9908-12 43 15 3.1 424 4 US-09-037-9908-12 44 15 3.1 494 4 US-09-123-912-54 45 15 3.1 725 3 US-09-123-912-54						Ω	ი	ი								ი	O	c
3.1 199 3 3.1 199 3 3.1 177 1 3.1 177 1 3.1 177 1 3.1 177 1 3.1 177 1 3.1 177 1 3.1 177 1 3.1 177 4 3.1 249 3 3.1 379 4 3.1 422 4 3.1 422 4 3.1 422 4 3.1 725 3	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	82
7254 4 4 4 2 2 4 4 4 2 2 4 4 4 2 3 5 4 4 2 3 5 4 4 2 3 5 4 4 4 4 2 4 4 2 4 4 2 4 4 2 4 4 2 4 4 2 4 4 2 4 4 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
4 1 W 2 4 4 4 4 W 3 4 4 4 4 W	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3. ₁	3.1	3.1	3.1	3. ₁	3.1	<u>ن</u> . ⊥
1 US-08-756-849-77 3 US-08-756-849-77 4 US-08-756-849-77 4 US-08-037-990B-36 1 US-08-05-845-9 1 US-08-429-523-9 1 US-08-429-523-9 1 US-08-429-520-9 1 US-08-676-849-4 3 US-08-756-849-4 3 US-08-756-849-4 3 US-08-756-849-4 3 US-08-756-849-4 3 US-08-756-849-4 3 US-08-756-849-4 4 US-08-123-9128-54 4 US-09-037-990B-12 4 US-09-037-990B-12 5 US-09-037-990B-12 5 US-09-037-990B-12	725	494	494	422	379	354	249	249	177	177	177	177	177	177	162	99	99	Ú
US-08-248-474-77 US-08-248-474-77 US-08-756-849-77 US-08-037-990B-36 US-08-429-523-9 US-08-429-523-9 US-08-429-520-9 US-08-429-520-9 US-08-429-520-9 US-08-429-520-9 US-08-429-520-9 US-08-429-520-9 US-08-429-520-9 US-08-269-136B-9 US-08-269-136B-9 US-08-288-151A-58 US-09-037-990B-12 US-09-037-990B-12 US-09-123-912-54 US-09-123-912-54	ω	4	4	4	4	N	w	Н	4	٢	٢	_	_	_	4	ω	_	4
	US-09-197-801-12	US-09-123-912-54	US-09-040-984-54	us-09-037-990B-12	US-08-838-151A-58	US-08-676-279-38	US-08-756-849-4	US-08-248-474-4	US-09-269-136B-9	US-08-429-520-9	US-08-429-522-9	US-08-429-532-9	US-08-429-523-9	US-08-065-845-9	US-09-037-990B-36	US-08-756-849-77	US-08-248-474-77	US-09-03/-990H-64
	12,	54,	54,	12,	58,		4,	4,	9	,	9,	9	9	9	36,	77,	77,	64,
	Appl	Appl	Appl	Appl	Appl	Appl	Appli	App11	Appli	Appli	Appli	Appli	Appli	Appli	Appl	Appl	Appi	rddy

ALIGNMENTS

```
APPLICATION NUMBER: US/08/985,908
FILING DATE: 05-DEC-1997
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 8-325659
FILING DATE: 05-DEC-1996
ATTORNEY/AGENT INFORMATION:
NAME: NORMAN F. OBLON
REGISTRATION NUMBER: 24,618
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                  TELEFAX: 703-413-2220
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: MASAYUKI ARAKI, TITLE OF INVENTION: METHOD NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                TELEPHONE: 703-413-2220
                                                                                                                                                   ORGANISM: Escherichia coli
STRAIN: JM109
                                                                                                                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                           1331 bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, 1755 S. JEFFERSON DAVIS HIGHWAY, FOURTH FLOOR
                                                                                              CDS
10..1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                      703-413-3000
                                                                                                                                                                                                             genomic
                                                                                                                                                                                                                                                     double
                                                                                                                                                                                                                                                                                                                                  23:
Score 18; DB
b; Pred. No. 4.3
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MASAKAZU SUGIMOTO, YASUHIKO YOSHIHARA, AND TSUYOSHI FOR PRODUCING L-LYSINE
                                      DB
                                      ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #1.30
                                    Length 1331;
```

0,

Indels

0;

Gaps

0

RESULT 2 US-08-162-809-7

GENERAL INFORMATION:

CORRESPONDENCE ADDRESS:

ADDRESSEE:

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC COM

COUNTRY: UZIP: 92122

STREET: 4370 La CITY: San Diego STATE: Californi

California

δÃ

```
CURRENT APPLICATION.

APPLICATION NUMBER: US/08/162,809
FILING DATE:
CLASSIFICATION: 514
ATTORNEY_AGENT INFORMATION:
NAME: Campbell, Cathryn
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-LJ 9503
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-9001
TELEFAX: (619) 535-9001
                                                                                      APPLICANT: Lamb et al., Christopher J.
TITLE OF INVENTION: NOVEL TRANSCRIPTION ENHANCER ELEMENT AND
TITLE OF INVENTION: TRANSCRIPTION FACTOR AND METHODS OF USE THEREFOR
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No. 5457048
                                                                                                                                                                                                                                                                                                                165 GGCCATTGGTGGTGCTGT 182
                                                                                                                                                                                                                                                                                             271 GGCCATTGGTGGTGCTGT 288
                                                          ADDRESSEE: Fish & Richardson p.C.
STREET: 4225 Executive Square, Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Pasquale, Elena B.
APPLICANT: Sajjadi, Fereydoun G.
TITLE OF INVENTION: NUCLEOTIDE SEQUENCES, AND METHODS OF USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132 GCTGTTTGGTAAAGGTAG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  252 GCTGTTTGGTAAAGGTAG 269
                                                                                                                                                                                                            Application US/08669721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3776 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: CAMPBELL AND FLORES
4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                       100.08;
                                                                                                                                                                                                                                                                                                                                                                          Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                         4.4;
                                                                                                                                                                                                                                                                                                                                                                                   Length 3776;
                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                             COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30

EVERENT APPLICATION DATA:
APPLICATION NUMBER: US/09/189,344

CLASSIFICATION:
PRIOR APPLICATION DATA:
ADDITIONATION DATA:
ADDITIONATION NUMBER: US/08/669.721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
US-09-189-344-2/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-669-721-2
NAME: Ellison, Eldora L.
REGISTRATION NUMBER: 39,967
REFERENCE/DOCKET NUMBER: 0725
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09189344
Patent No. 6191258
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                             APPLICATION NUMBER: US 01
FILING DATE: 27-JUN-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Ellison, eldora L.
REGISTRATION NUMBER: 39,967
REFERENCE/DOCKET NUMBER: 0725
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 619/678-5099 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                            STREET: 4225 ExeCITY: La Jolla
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 2165 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
ZIP: 920
                                                                                                                                                                                                                                                                                                                      92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92037
                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                            LAMD et al., Christopher J.

VENTION: NOVEL TRANSCRIPTION ENHANCER ELEMENT AND

VENTION: TRANSCRIPTION FACTOR AND METHODS OF USE THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
61..1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.5%; SC

100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/669,721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39,967
VER: 07251/014001
                                             07251/014001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 17; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

RESULT 3
US-08-669-721-2/c

**Courance 2, Appl

**Courance 2, Appl

Patent No. 583422 Patent No. 583422 Patent INFORMATION:

STATE: STREET:

CA.

Jolla

Ъ

US-08-162-809-7

FEATURE:

NAME/KEY:

LOCATION:

CDS 290..3208

TOPOLOGY:

linear

TELEFAX: (619) 535-894
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:

LENGTH: 3776 base prype: nucleic acid strandedness: both

Matches Query Match

Local

Similarity

Conservative

INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:

2

2165 base pairs

```
В
                                                                                                                                                                                                                                                   ; TOPOLOGY: 13; MOLECULE TYPE: US-08-742-877-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
US-08-742-877-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
US-09-189-344-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/08742877 Patent No. 6046380
                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTY, COUNTY, COUNTY, COUNTY, COMPUTER READABLE FORM:
COMPUTER READABLE FORM:
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
COUNTY, CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (202) 371-2600
TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 940871
FILING DATE: 03-MAY-1994
ATTORNEY/AGENT INFORMATION:
NAME: FLESHNER, RAZ E.
REGISTRATION NUMBER: 94,331
REFERENCE/DOCKET NUMBER: 0623
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFO
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPEKATING CONTROL OF THE SOFTWARE: PatentIn Release #1.v, CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
US/08/742,877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 14

CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C.
STREET: 1100 NEW YORK AVENUE, NW, SUITE 600
1495 TTTGGAAAAGGTAAAAG 1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 ACTGGGGCTGTTGTTGG 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                           255 TTTGGAAAAGGTAAAAG 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              673 ACTGGGGCTGTTGTTGG 657
                                                                                                                                                                                                                                                                                                                                                                                        TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1100 NEW CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 2165 base pai
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE: 01-NO
                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match 3.5%;
Local Similarity 100.0%;
es 17; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                           l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                            2340 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLARK, Anthony J
                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61..1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996
                                                                                                                                                     3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GB 9408717.8
                                                                                                                                                     Score 17; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0623.0470001/REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                           Mismatches
                                                                                                                                                         DB
14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                   w
••
                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                Length 2340;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                           Indels
                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                       Gaps
                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

RESULT 6

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-742-877-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-053-871A-22/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-053-871A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 51917-B
CURRENT APPLICATION NUMBER: US/09/053,871A
CURRENT FILLING DATE: 1998-04-01
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PALENTIN VET. 2.1
SEQ ID NO 22
LENGTH: 2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08742877 Patent No. 6046380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 100.08;
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 22, Application US/09053871A Patent No. 6315995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: CLARK, Anthony J.
TITLE OF INVENTION: DNA SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Schmidt, ann Marie
TITLE OF INVENTION: METHODS FOR TREATING AN ISCHEMIC DISORDER AND IMPROVING
                                                                                   TELEFAX: (202) 371-25.
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo Sapien
                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                  REGISTRATION NUMBER: 34,331
REFERENCE/DOCKET NUMBER: 06
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1928 TTTGGAAAAGGTAAAAG 1912
                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9408717.8
FILLING DATE: 03 MAY-1994
ATTORNEY/AGENT INFORMATION:
                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255 TTTGGAAAAGGTAAAAG 271
                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/742,877
FILING DATE: 01-NOV-1996
CLASSIFICATION: 435
STRANDEDNESS:
TOPOLOGY: lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                  RY: USA
20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WASHINGTON
                                                                                                                                                                                        FLESHNER, RAZ E
                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pinsky, David J.
Stern, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Solomon, Robert A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rose, Eric
                                               2802 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C. 1100 NEW YORK AVENUE, NW, SUITE 600
                                                                                     (202) 3/1
(202) 3/1-2540
              single
                                                                                                                     371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 17;
Pred. No.
                                                                                                                                                        0623.0470001/REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                               Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
US-08-947-823-1
                                Matches
                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-947-823-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY:
; LOCATION:
US-08-742-877-1
                                                                                                                                                                                                                                                                                                                          TELEFAX: (415) 576-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No. 6114605
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1,
                                                                                                                                                                TOPOLOGY: li
                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 51952 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 6(
FILING DATE: 10-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/
FILING DATE: 09-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Williamson, Valerie M. APPLICANT: Kaloshian, Isgouhi APPLICANT: Yaghoobi, Jafar
                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Bastian, Kevin L.
REGISTRATION NUMBER: 34,774
REFERENCE/DOCKET NUMBER: 02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1957 TTTGGAAAAGGTAAAAG 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 09-OC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255 TTTGGAAAAGGTAAAAG 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 100.0%; Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY:
                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08947823
              3.5%; Score 17; ilarity 100.0%; Pred. No. Conservative 0; Mismatc
                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Milligan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mat_peptide
168..1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
30..1412
                                                                                                                                                             DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sig_peptide
30..167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   UMBER: US/08/947,823
09-OCT-1997
                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                 576-0300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Procedures and Materials for Conferring
Pest Resistance in Plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                us 60/028,191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/US97/18802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stephen
                                                                                                                                                                                                                                                                                                                                                                                                                                    023070-070210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 17; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                            DB 3;
16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
••
                                                              Length 51952;
           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                               ZIP:
```

```
RESULT 10
US-07-959-941-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 4088325 GGCGGTGTTGCTGGCCA 4088309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Application US/07959941 Patent No. 5364781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-103-840A-2/c
APPLICATION NUMBER: US/07,
FILING DATE: 1921009
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UMBER: US 79:
FILING DATE: 18-NOV-1991
ATTORREY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                        APPLICANT: HUTCHINSON, Charle APPLICANT: MADDURI, Krishna M APPLICANT: TORTI, Francesca APPLICANT: COLOMBO, Anna L. TITLE OF INCENTION: PROCESS F NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09103840A Patent No. 6294328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
TITLE OF INVENTION: TUBERCULOSIS
                                                                                                                   SOFTWARE: Patentin Rel
                                                                                                                                       COMPUTER READABLE FORM:
MEDLIM TYPE: Floppy disk
COMPUTER: IBM Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: CDC 1551
OTHER INFORMATION: "n" bases at various positions throughout the sequence
OTHER INFORMATION: represent a, t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS: ADDRESSEE: Nikaido,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49389 TCATTTCAACAGAAAAA 49405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 GGCGGTGTTGCTGGCCA 131
                                                                                                                                                                                                                                            STATE: D.C.
                                                                                                                                                                                                                                                                    STREET: 655 FILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 100.
hes 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             470 TCATTTCAACAGAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                                                                                                                                               PRY: U.S.A.
20005-5701
                                                                                                                                                                                                                                                                                          655 Fifteenth Street N.W. Suite 330
                                                                                                                                                                                                                                                                                                                                                                                                                                  HUTCHINSON, Charles
                                                                                                                                                                                                                                                                                                            Nikaido, Marmelstein,
                                                                                                                                                                                                                                                                                                                                                      PROCESS FOR PREPARING DAUNORUBICIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.5%;
                                  US 793,873
                                                                                                                                     Release #1.0,
                                                                                                    US/07/959,941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Score 17; DB
%; Pred. No. 15;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                  Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4403765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

0

REGISTRATION NUMBER:

P-36,105

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; LOCATION:
US-07-959-941-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-259-924-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application Patent No. 5563064
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 3.3%; Score 16; Best Local Similarity 100.0%; Pred. No. Matches 16; Conservative 0; Mismatc
                                                                                                                            APPLICATION NUMBER: US 07/959,941
FILING DATE: 09-OCT-1992
ATTORNEY/AGENT INFORMATION:
NAME: Kitts, Monica C.
REGISTRATION NUMBER: 36,105
REFERENCE/DOCKET NUMBER: 1615-4003
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)638-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (202)638-481 INFORMATION FOR SEQ ID NO:
                                                                             TELEPHONE: (202)638-5000
TELEFAX: (202)638-4810
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 7
FILING DATE: 18-NOV-1991
                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1632 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (202)638-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439 GCATGCCGGCAACCGG 454
                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 655 Fift
CITY: Washington
STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: NUCLEIC ACID STRANDEDNESS: double TOPOLOGY: linear
                               LENGTH: 1632 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: U.S.A. ZIP: 20005-5701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GCATGCCGGCAACCGG 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/08259924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Nikaido, Marmelstein, Murray
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1632 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COLOMBO, Anna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202)638-4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MADDURI, Krishna M.
TORTI, Francesca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HUTCHINSON, Charles R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
204..1271
             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA (genomic)
DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROCESS FOR PREPARING DAUNORUBICIN
                                                                                                                                                                                                                                                                                                    US 793,873
                                                                                                                                                                                                                                                                                                                                                                    us/08/259,924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1615-1816CIP
                                                                                                                                                                  1615-4003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
; LENGTH: 2251
; TYPE: DNA
; ORGANISM: Pinus taeda
US-08-991-677-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
US-08-991-677-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
US-08-097-997A-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-259-924-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Chiang, Vincent L
APPLICANT: Carraway, Daniel T
APPLICANT: Smeltzer, Richard H
TITLE OF INVENTION: Production of Syringyl Lignin in Gymnosperms
FILE REFERENCE: 50617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/08/991,677A CURRENT FILING DATE: 1997-12-16 EARLIER APPLICATION NUMBER: US 60/033,381 EARLIER FILING DATE: 1996-12-16 NUMBER OF SEQ ID NOS: 11
                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/097,997A
FILING DATE: 29-JULY-1994
CLASSIFICATION: 435
                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                       APPLICANT: Ihle, James N.
APPLICANT: Silvennoinen, Ollie
APPLICANT: Withhuh, Bruce A.
APPLICANT: Quelle, Frederick W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Jak Kinases and Regulation of Cytokine Signal TITLE OF INVENTION: Transduction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             439 GCATGCCGGCAACCGG 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                310 TAAAATAAAGCTAAAC 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              234 TAAAATAAAGCTAAAC 249
                                                                                                                                                                                                 STREET: 1100 New CITY: Washington
                                                                                                                                                     COUNTRY: U.S.A. ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 3.3%;
Local Similarity 100.0%;
les 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATGCCGGCAACCGG 16
                                                                                                                                                                                                                                                                                                                                                                                                              10, Application US/08097997A
5. 5728536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                     D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.3%;
imilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/08991677A
                                                                                                                                                                                                                     1100 New York Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
204..1271
                                                                                                                                                                                                                     Sterne, Kessler, Goldstein & 00 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
48;
                                                                                                                                                                                                                                        Fox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/282,012
FILING DATE: 29-JUL-1994
PRIOR APPLICATION NUMBER: 08/097,997
FILING DATA:
APPLICATION NUMBER: 08/097,997
FILING DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/118,968
FILING DATE: 09-SEP-193
                                                                                                              NAME: Bugaisky, Lawrence B.
REGISTRATION NUMBER: 35,086
REFERENCE/DOCKET NUMBER: 0656.0370002/SLF/LBB
                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
APPLICATION NUMBER: US/08/665,574C
FILING DATE: 18-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 10
SEQUENCE CHARACTERISTICS:
LENGTH: 3429 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
FERRITES: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: FOX, Samuel L.
REGISTRATION NUMBER: 30,353
REFERENCE/DOCKET NUMBER: 06:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371_2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10, Application US/08665574C
). 6136595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3: Sterne, Kessler, Goldstein & 1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Silvennoinen, Ollie
Witthuhn, Bruce A.
IVENTION: Jak Kinases and Regulation of Cytokine
IVENTION: Signal Transduction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2) 3/1
371-2540
NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.3%; Score 16;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0656.0370000/SLF/GKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 3429;
48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
;
US-08-946-994-10
                                                                                                                                                                                                                                                                         CLASSIFICATION:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/665,574
PILING DATE: 18-JUN-1996
APPLICATION NUMBER: 08/282,012
PILING DATE: 29-JUL-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/097,997
FILING DATE: 29-JUL-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/118,968
FILING DATE: 09-SEP-1993
                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-946-994-10/c

- Sequence 10, Application US/08946994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                             FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 10, Applica......
Sequence 10, Applica......
Patent No. 6210654
GENERAL INFORMATION:
TOANT: Ihle, James N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
; LOCATION:
US-08-665-574C-10
                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                         NAME: FOX, Samuel L.
REGISTRATION NUMBER: 30,353
REFERENCE/DOCKET NUMBER: 06
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIOM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                             LENGTH: 3429 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Silvennolner, C.A.
APPLICANT: Witthuhn, Bruce A.
APPLICANT: Quelle, Frederick W.
TITLE OF INVENTION: Jak Kinases and Regulation of Cytokine Signal
TITLE OF INVENTION: Transduction
TITLE OF INVENTION: Transduction
                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 1100 New I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2063 CTGGCCAGCTGTTTGG 2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125 CTGGCCAGCTGTTTGG 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Sterne, Kessler, Goldstein & STREET: 1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 3.3%; Score 16; Local Similarity 100.0%; Pred. No. es 16; Conservative 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRY: U.S.A.
20005-3934
                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/665,574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/946,994
                                                                                                                                             10:
                                                                                                                                                                                                   0656.0370002/SLF/GKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

RESULT 14 US-08-665-574C-10/c

GENERAL INFORMATION:

APPLICANT:

Ihle, James N.

NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS: TITLE OF INVENTION:

STREET:

ADDRESSEE:

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

COUNTRY: U.S.A. ZIP: 20005-3934 CITY: Washington

D.C.

Дb

US-08-097-997A-10

NAME/KEY: CDS LOCATION: 1...

1..3426

FEATURE:

Matches Query Match

Local Similarity

Conservative

TELEFAX: (202) 371-25

371-2540 ID NO: 10: 371-2600

TELEPHONE:

(202)

FILING DATE: 09-SEP-1993
ATTORNEY/AGENT INFORMATION:

SEQUENCE CHARACTERISTICS:

ó; 0; Gaps Query Match 3.3%; Score 16; DB 4; Length 3429; Best Local Similarity 100.0%; Pred. No. 48; Matches 16; Conservative 0; Mismatches 0; Indels

Search completed: October 27, 2002, 22:53:59 Job time: 942.093 secs

THIS PAGE BLANK (USPTO)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                     ဂ ဂ
                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on :
  987654924
                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                     Score
  23
22
20
19
19
18
                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OLIGO_NUC Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-677-374-1
486
1 atgaacagaggatgtttgca.....aagtcatttcaacagaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          October 27, 2002, 17:46:54 ; Search time 123.109 Seconds (without alignments) 6777.910 Million cell updates/sec
                                                            100.0
100.0
4.7
                                                                                                             Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                     N_Geneseq_032802:*
                                                                                                                                                                                       GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
           .9.9
                                                                                                                                                                                                                                                                                                                          /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1985.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1986.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1987.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1988.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                      /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                   /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                          /SIDS1/gcgdata/geneseq/genesegn-emb1/NA1982.DAT:*
                                                                                                    Length DB
                    50000
1300
1302
  ij
AAF86246
AAH79040
AAF86259
AAF86353
AAA96363
AAC48250
AAC47949
AAS26580
AAF16080
                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3472872
                 Forward OspA PCR p
Reverse OspA PCR p
Polymorphic repeat
Arabidopsis thalia
Arabidopsis thalia
                                                                                                   Description
                                                                    OspA 17kD antigen
Piscirickettsia sa
cDNA encodin
prostate can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                          a a
                                                                                                                                                                                                                                                                                                                                                                                                                                                  000000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               000000
                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1999;
           17-SEP-1999;
                                                 17-MAR-2001
                                                                     CA2281913-A1
                                                                                                                                                                                                                                                       11-JUL-2001
                                                                                                                                                                                                                                                                           AAF86246;
                                                                                                                                                                                                                                                                                              AAF86246 standard;
                                                                                                                                           1..486
```

Ε,	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	18	18	18	18	18	18	18	18	18
																							٠	3.5		٠	٠	٠				3.7	3.7	3.7	3.7	3.7
Ļ	2 5	16	8	1971	1707	1633	1521	1367	1285	1276	1275	1273	1273	1273	1273	1273	1272	1272	995	862	731	632	430	402	402	387	340	53552	14759	14250	10432	9813	3776	3659	1331	1293
2	۱ د	19	22	22	24	21	22	23	22	22	22	22	22	22	22	22	22	22	21	22	21	21	21	22	22	22	22	22	22	23	23	20	16	8	19	œ
ND1124224	VEL 24224	AAV09781	AAS23063	ABA55251	AAI71008	AAC93386	ААН68197	AAS90536	AAF88311	AAF54078	AAF54077	AAF54076	AAF54075	AAF54074	AAF54073	AAF54017	AAF54080	AAF54079	AAC34118	AAH03544	AAC56443	AAC44035	AAC43569	AAK05021	ABA26539	AA183097	AA190320	AAS13655	AAS46273	ABL21060	ABL10082	AAX13059	AAQ90655	0	402	AAN71108
מוספסףוודדם ווופדמווסא	Drocophile molepon		DNA encoding novel	111	rIJ	Λ	C glutamicum codin	'n	ÌS	, ag	hFIX gene AE3′ age	gene AE3'	AE3'	gene AE3'	gene AE3	gene 3' UI	gene	Ψ		CDNA clo	us radiat	Zea mays DNA fragm	mays DNA	brain		polynucleot	olynu	Genomic DNA sequen	DNA encoding novel	Drosophila melanog	Drosophila melanog	Enterococcus faeca	ated F	Ö.	hia	Optimized Escheric

ALIGNMENTS

```
RESULT 2
AAH79040
ID AAH7
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 486
                                              481
                                                                481
                                                                     421 CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA 480
                                                                                                                           361
                                                                                                                                             361
                                                                                                                                                                301
                                                                                                                                                                                         241 AAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGGGTAATCCA 300
                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                              This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a ospa in the form of a vaccine termed Ospa, or an immunogenic fragment of P. salmonis. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other ricketterial pathogen sequence represents DNA encoding the P. salmonis. The method is also useful for protecting against salmonid protectin with an N-terminal (SRS) and other rickettsial diseases. The present an anti-ospa antibody response.
                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 486 BP; 137 A; 79 C;
                                                     GAAAAA 486
                                            GAAAAA
                                                             CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                        19
                                                                                                                                                                                                                                                                                                                                                                                             Local Sim:
hes 486;
                                                                                                             GAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAAGGCGATGATTGCAGGGCAGAAG 420
                                                                                                  GAGCGTCGCCAGCAATATTGTCGAGAATTTTCAGCAAAAGGCGATGATTGCAGGGCAGAAG
                                                                                                                                         GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 2B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                  GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA 360
                                                                                                                                                                              AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KAYW/)
(BURI/)
                                                                                                                                                                                                                   GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                             GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA 240
                                                                                                                                                                                                                                                       GTTGCTGGCCAGCTGTTTGGTAAAAGGTAGTGGTCGAGTTGCAATTGGCCATTGGTGGTGCT
                                                                                                                                                                                                                                                                  GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGCT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kay ww,
                                                                                                                                                                                                                                                                                            ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTTAGTTGGC
                                                                                                                                                                                                                                                                                                                                              ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-316844/34
)B; AAB81126.
                                                                                                                                                                                                                                                                                                                                                                                                   _Similarity
                                           486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) KAY W W.
) BURIAN J.
) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burian J,
                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MA
                                                                                                                                                                                                                                                                                                                                                                               Score 486; DB 22; Length Pred. No. 6.8e-237; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                    144 G; 126 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                        0;
                        Ωy
                                           Дb
                                                             Qy
                                                                                  Db
                                                                                                  δÃ
                                                                                                                        Вb
                                                                                                                                                                                                 QΥ
                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                            Query Match
                      181
                                          121
                                                            121
                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                              Burzio
                                                                                                                                                                     Local
```

δÃ В

AAH79040 standard;

CDNA; 489

Дb ρ B γQ Ъ Qy B δÃ 밁 δÃ В Qγ 뭕 ρy Ъ Qy

```
В
                                                          241
                                                                                    181
                                                                                                                                                                                                                                                                                                                                                            The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia stanonis for production of a vaccine with antibacterial activity to known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                              Sequence 489 BP; 139 A; 79 C; 144 G; 127 T; 0 other;
                                                                                                                                                                61 TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 3; Fig 4; 25pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acids encoding an amino acid sequence homologous to the surface antigen present on Piscirickettsia salmonis are useful to protect fish against piscirickettsiosis
                                                                                                                                                                                                                                        1 ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-MAR-2000;
01-JUL-2000;
01-JUL-2000;
            AAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
AAGCTAAACCAGAGTTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                   GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (AQUA-) AQUA HEALTH EURO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-JUL-2000;
                                                                   GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGGTGCT 180
                                                                                                          GTTGCTGGCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATTGGCCATTGGTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200168865-A2.
                                                                                                                                                                                 TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12-MAR-2001; 2001WO-GB01055
                                                                                                                                                                                                                        ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTTAGTTGGC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Piscirickettsia salmonis; piscirickettsiosis; salmonid rickettsial; septicaemia; SRS; Surface antigen; vaccine; antibacterial; fish; ATCC VR-1361; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Piscirickettsia salmonis polynucleotide P10.6
                                                                                                                                                                                                                                                                                                             al Similarity
486; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ААН79040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-639050/73.
DB; AAG78025.
                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000GB-0005838.
2000GB-0016080.
2000GB-0016082.
2000GB-0018599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                  100.0%; ;
100.0%; ;
tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jones
                                                                                                                                                                                                                                                                                                     Score 486; DB 22;
Pred. No. 6.8e-237;
                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Griffiths
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                Length 489;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Valenzuela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۵,
                                                     240
                                                                                240
                                                                                                            180
                                                                                                                                                                                                                                                                               0
```

Match

В 20

```
RESULT 3
AAF86249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                              This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence The primer is used in the construction of pTYB1-17kD, which is used to express optimised OspA antigen with a C-terminal fusion partner. The OspA fusion protein is used in a vaccine to create an anti-OspA antibody manufacture in the construction of pTYB1-17kD, which is
                                                                                                                                                                                                                       Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                            WPI;
                                                                                                                                                                                                                                                                                                                           (KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                    Example
                                                                                                                                                                                                                                                                                                    Kay ww,
                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vaccine; OspA; sa
SRS; 17E2; fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                               17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                 17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Forward OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86249;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86249 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCGTCGCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                           2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                                                                           KAY W W.
BURIAN J.
KUZYK M A.
                                                                                                                                                                                                    5.
                       response.
                                                                                                                                                                                                                                                                                                    Burian J,
                                                                                                                                                                                                 Page 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCR primer used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                               99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                  35pp;
                                                                                                                                                                                                                                                                                                    Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                  English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCR primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       construction of pTYB1-17kD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
```

Sequence

33

BP;

13

۶,

ç

11

<u>ი</u>

σ ::

0 other

Дb QY

40

19

465

GCAAGTCATTTCAACAGAAAAA 486

Conservative

0

Mismatches

0

Indels

0;

0

100.0%;

Score 22;

Pred. No.

DB 22; . 0.33;

Length

Query Match Best Local Similarity Matches 22; Conserv

Sequence

40

B₽;

8

<u>,,</u>

10

```
RESULT 4
AAR86250/c
ID AAF862
XX AAF862
XX AAF862
XX AAF862
XX Poikil
XX Piscir
OS Piscir
OS Synthe
XX CA2281
XX IT-MAR
XX IT-SEP
XX (KAYW)
PA (KAYW)
PA (KAYW)
PA (KUZY/
PA (KAY WW
XX WHI; 2
CC THIS i
CC This i
CC This i
CC Sequer
CC P. Salmor
CC Salmor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                           salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly pointilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used to amplify the P. salmonis OspA DNA sequence. The primer is used in the construction of DTMBI-17kD, which is used to express optimised OspA antigen with a C-terminal fusion partner. The OspA fusion protein is used in a vaccine to create an anti-OspA
                                                                                                                                                                                                                                                                                                                                                This invention relates to a method for the protection against infection of a polkllothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vaccine; OspA; salmonid rick(
SRS; 17E2; fusion construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Poikilothermic fish; Piscirickettsia salmonis; vaccine; OspA; salmonid rickettsial septicaemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    septicaemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Reverse OspA PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86250
                                                                                                                                                                                                                                                                                                                                                                                                                                      Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGAACAGAGGATGTTTGCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAACAGAGGATGTTTGCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for protecting poikilothermic fish against salmonid rickettsial aemia and other rickettsial diseases comprises administering a e containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
23; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                          response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the OspA protein
                                                                                                                                                                                                                                                                                                                                                                                                                                   35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
c; 7 G; 15 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rickettsial septicaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MA.
                                                                                                                                                                                                                                                                                                                                                                                                                                   English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCR primer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              construction of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.
BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rickettsial pathogen;
a; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pTYB1-17kD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

AAA96363;

0 Gaps

0,

```
CC and flanked the human CTLA-4 locus were cloned and sequenced. The CC sequence data was assembled into a contiguous sequence that is presented CC in AAA95363-68. AAA95363-68 de comprise BAC clone 22700, and AAA96365-68 CC microsatellite repeat (PMR) sequences. The specification describes a CC autoimmune disease. The method comprises detecting a pMR sequence in the CC D28, ICOS gene or CTLA4 gene of the human costimulatory receptor gene CC then be detected by rapid and convenient high resolution processes. The method is useful for determining the predisposition of a human subject to develop CC Locus (hCGRL). PMR sequences vary in length among individuals and can be complified to generate products that differ in size. These products can cc method is useful for determining the predisposition of insulin-dependent CC method is useful for determining the predisposition of insulin-dependent CC diabetes mellitus (IDDM), Addison's disease, Graves disease, autoimmune
                                                                                                                                                                                                                                                                       Determining predisposition of humans to develop autoimmune disease involves detecting polymorphic microsatellite repeat sequence within human costimulatory receptor gene locus
                                                                                                                                                                                                                                                                                                                                                                                                       (GEMY ) GENETICS INST INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200056856-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ICOS gene; CTLA4 gene; costimulatory receptor gene locus; CGRL; lupus; insulin-dependent diabetes mellitus; IDDM; Addison's disease; leprosy; dasease; autoimmune hypothyroidism; myasthenia gravis; thymoma; thyroiditis; postpartum thyroiditis; rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hashimoto's disease; coeliac disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Autoimmune disease; polymorphic microsatellite repeat; PMR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAA96363 standard; DNA; 50000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polymorphic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-FEB-2001
                                                                                                                                                                                                                                                 Page 67-82; 160pp; English.
                                                                                                                                                                                                                                                                                                                                                                                Wu P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US07938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat microsatellite sequences present in the
                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0126215
                                                                                                                                                                                                                                                                                                                                                                           Gray GS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
30766.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "sara45/46 microsatellite repeat" 27689..27780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /noté= "PW210/211 microsatellite
23904..23957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "sara43/44
19911..19956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "sara41/42 microsatellite repeat"
6550..6597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers 5722..5746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "sara17/18
.30801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..23957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "sara19/20 microsatellite repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          microsatellite repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         microsatellite repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTLA4 locus
        AAC48250/c
ID AAC48250 standard; DNA; 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
30-APR-1999
30-APR-1999
04-MAY-1999
05-MAY-1999
06-MAY-1999
06-MAY-1999
07-MAY-1999
11-MAY-1999
14-MAY-1999
14-MAY-1999
14-MAY-1999
14-MAY-1999
14-MAY-1999
19-MAY-1999
21-MAY-1999
21-MAY-1999
21-MAY-1999
21-MAY-1999
21-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       323333×3
                                                                                                                                                                                                                                                                                                     16-APR-1999,
19-APR-1999,
21-APR-1999,
23-APR-1999,
23-APR-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                        28-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-MAR-1999
23-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                          25-mar-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-FEB-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               metabolic pathway; promoter; termination sequence; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana DNA fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAC48250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3317 AGAGTTTGGAAAAGGTAAAA 3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothyroidism, myasthenia gravis, thymoma, lupus, thyroiditis, postpartum thyroiditis, rheumatoid arthritis, Hashimoto's disease, coeliac disease and leprosy. PMR sequences within hCRGL are useful as markers in a variety of assays and in the field of forensic medicine, disease diagnosis and human genome mapping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251 AGAGTTTGGAAAAGGTAAAA 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 Similarity 100.
20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50000 BP; 14521 A; 9882 C; 11191 G; 14406 T; 0 other;
                                       99US-0128234
99US-0128234
99US-0128234
99US-0128714
99US-0130077
99US-01300891
99US-0131449
99US-0132407
99US-0132407
99US-0132485
99US-0132485
99US-0132485
99US-0134286
99US-0134286
99US-0134286
99US-0134218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000EP-0301439
                             99US-0135629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0121825.
99US-0123180.
99US-0123548.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO: 56805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 50000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
```

RESULT 5
AAAS 56136
XX
AAAS 56136
AAAS 5613

satellite satellite satellite satellite satellite

satellite

25-MAR-1999; 24-MAR-2000;

Claim 2;

? ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	סיסיסיסיסיסיסיסיסיסיסיסיסיסיסיסיסיסיסי
18-JUN 1999 22-JUN 1999 23-JUN 1999 23-JUN 1999 24-JUN 1999 26-JUN 1999 27-JUN 1999 28-JUN 1999 28-JUN 1999 28-JUN 1999 28-JUN 1999 29-JUN 1999 20-JUN 1999 11-JUN	8-MAY-199 3-JUN-199 3-JUN-199 3-JUN-199 7-JUN-199 0-JUN-199 0-JUN-199 6-JUN-199 6-JUN-199 7-JUN-199 8-JUN-199 8-JUN-199
990S-0139460 990S-0139461 990S-0139462 990S-0139763 990S-0139763 990S-0140354 990S-0140354 990S-0140823 990S-0140823 990S-0141842 990S-0141842 990S-0142055 990S-0142055 990S-0142055 990S-0142055 990S-014205 990S-014206 990S-0144085 990S-0144085 990S-0144085 990S-0144086 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0144331 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145218 990S-0145288 990S-0145388 990S-0145388	903-013678 903-01372 903-01372 903-01372 903-01372 903-01372 903-01384 903-01391 903-01394 903-01394 903-01394 903-01394 903-01394 903-01394 903-01394
	ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק
20-AuG-1999 23-AuG-1999 25-AuG-1999 27-AuG-1999 27-AuG-1999 31-AuG-1999 32-SEP-1999 33-AUG-1999 32-SEP-1999 33-AUG-1999 32-SEP-1999 33-AUG-1999 32-SEP-1999 33-AUG-1999 32-SEP-1999 33-AUG-1999 32-SEP-1999 33-SEP-1999 33-SEP	- AUG - J - AUG
990S-0149902 990S-0149902 990S-0149902 990S-0151086 990S-0151086 990S-0151086 990S-0151080 990S-0151438 990S-01514038 990S-01514038 990S-0154018 990S-0154018 990S-0154079 990S-01554039 990S-0155465 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0156596 990S-0158232 990S-0159233 990S-0159233 990S-0159638 990S-0159638 990S-0160767 990S-0160981 990S-0160981 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405 990S-0161405	9US-014736 9US-014719 9US-014726 9US-014726 9US-014730 9US-014731 9US-01474 9US-014817 9US-014831 9US-014886 9US-014886 9US-014886 9US-014886 9US-014886

AY-1999; AY-1999; UN-1999; UN-1999; UN-1999; UN-1999; UN-1999; UN-1999; UN-1999;	MAY-1999 MAY-1999 MAY-1999 MAY-1999 MAY-1999 MAY-1999 MAY-1999 MAY-1999	APR-1999 APR-1999 APR-1999 APR-1999 APR-1999 APR-1999 AMY-1999 MAY-1999 MAY-1999	PR 05-MRR-1999; 99US-0121825 PR 09-MAR-1999; 99US-0123180. PR 23-MAR-1999; 99US-0123548. PR 25-MAR-1999; 99US-0125788. PR 25-MAR-1999; 99US-0126264. PR 29-MAR-1999; 99US-0126785. PR 01-APR-1999; 99US-01267862. PR 06-APR-1999; 99US-0128714. PR 16-APR-1999; 99US-0128714. PR 16-APR-1999; 99US-0129845. PR 19-APR-1999; 99US-0129845.	25-FEB-20	EP1033405-A2	protein identification; signal transduction permetabolic pathway; promoter; termination sequentians that it is a comparable to the permetabolic pathway; promoter; termination sequentials are the permetabolic pathway; promoter; termination sequentials are the protein and the protein account of the	Arabidopsis thaliana DNA fragment SEQ ID NO. 55	DT 18-OCT-2000 (first entry)	RESULT 7 AAC47949/c ID AAC47949 standard; DNA; 1302 BP. XX AAC47949; XX AAC47949;	Db 121 CAGAAGCAAGAGATTTACG 103 Db 21; Length 1300; Mismatches 12; Conservative 0; Mismatches 0; Indels 0; Gaps Db 121 CAGAAGCAAGAAGTTTACG 433 Db 121 CAGAAGCAAGAAGTTTACG 103
PR 02-AUG-1999; 99US-0146386. PR 02-AUG-1999; 99US-0146388. PR 02-AUG-1999; 99US-0146389. PR 04-AUG-1999; 99US-0147204. PR 04-AUG-1999; 99US-0147302. PR 05-AUG-1999; 99US-0147303. PR 06-AUG-1999; 99US-0147303. PR 06-AUG-1999; 99US-0147403. PR 06-AUG-1999; 99US-0147403. PR 06-AUG-1999; 99US-0147403. PR 09-AUG-1999; 99US-0147403.	JUL-1995 JUL-1999 JUL-1999 JUL-1999 JUL-1999 JUL-1999 JUL-1999 JUL-1999; JUL-1999;	JUL-1990 JUL-1990 JUL-1990 JUL-1990 JUL-1990 JUL-1990 JUL-1990 JUL-1990 JUL-1990	-JUL-19 -JUL-19 -JUL-19 -JUL-19 -JUL-19 -JUL-19 -JUL-19 -JUL-19 -JUL-19)1-JUL-1)1-JUL-1)2-JUL-1	28-JUN-1 29-JUN-1	21 - JUN - 22 - JUN - 23 - JUN - 23 - JUN - 24 - JUN -	18-JUN-	18-JUN-	18-JUN 18-JUN 18-JUN 18-JUN 18-JUN 18-JUN	10-Juj 14-Juj 16-Juj 16-Juj 17-Juj 18-Juj

```
Query Match
Best Local s
Matches 19
                                                                                                                                                                                        13 - AUG 1999
16 - AUG 1999
17 - AUG 1999
20 - AUG 1999
20 - AUG 1999
21 - AUG 1999
22 - AUG 1999
23 - AUG 1999
25 - AUG 1999
26 - AUG 1999
27 - AUG 1999
28 - SEP 1999
29 - SEP 1999
20 - SEP 1999
21 - CCT 1999
22 - SEP 1999
23 - SEP 1999
24 - SEP 1999
25 - CCT 1999
26 - CCT 1999
27 - CCT 1999
28 - SEP 1999
29 - SEP 1999
20 - CCT 1999
21 - CCT 1999
21 - CCT 1999
22 - CCT 1999
23 - CCT 1999
24 - CCT 1999
25 - CCT 1999
26 - CCT 1999
27 - CCT 1999
28 - CCT 1999
29 - CCT 1999
21 - CCT 1999
22 - CCT 1999
23 - CCT 1999
24 - CCT 1999
25 - CCT 1999
26 - CCT 1999
27 - CCT 1999
28 - CCT 1999
29 - CCT 1999
20 - CCT 1999
21 - CCT 1999
22 - CCT 1999
23 - CCT 1999
24 - CCT 1999
25 - CCT 1999
26 - CCT 1999
27 - CCT 1999
28 - CCT 1999
29 - CCT 1999
29 - CCT 1999
20 - CCT 1999
21 - CCT 1999
22 - CCT 1999
23 - CCT 1999
24 - CCT 1999
25 - CCT 1999
26 - CCT 1999
27 - CCT 1999
28 - CCT 1999
29 - CCT 1999
29 - CCT 1999
                       415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AUG-1999;
-AUG-1999;
CAGAAGCAAGAGATTTACG
                                                          l Similarity
19; Conserv
                                                        3.9%; Silarity 100.0%; Conservative 0;
                                                                                                                                 9905-0157753.
9905-0158029.
9905-0158029.
9905-0158029.
9905-0158029.
9905-0159294.
9905-0159293.
9905-0159330.
9905-0159584.
9905-0159584.
9905-0160767.
9905-0160767.
9905-0160768.
9905-0160768.
9905-0160768.
9905-0160768.
9905-0160768.
9905-0160768.
9905-0160768.
9905-0160768.
9905-016076.
9905-016076.
9905-016076.
9905-016076.
9905-016076.
9905-016076.
9905-016076.
9905-016076.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9908-0148565.
9908-0149368.
9908-0149722.
9908-01499723.
9908-0149902.
9908-0149903.
9908-0150866.
9908-0151066.
9908-0151066.
9908-0151068.
9908-0151068.
9908-0151068.
9908-0151068.
9908-0151068.
9908-0151068.
9908-015108.
9908-015108.
9908-015108.
9908-015108.
9908-015108.
9908-0154018.
9908-0154018.
9908-0155468.
9908-0155468.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0148171.
99US-0148319.
99US-0148341.
                                                                            Score 19;
Pred. No.
                                                            Mismatches
                                                                          DB
12;
                                                                                              21;
                                                          0;
                                                                                            Length 1302;
                                                          Indels
                                                        0
                                                        Gaps
                                                        0
 RESULT 8

ARS20151 8

ARS20151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
31-JAN-2000
04-FEB-2000
24-FEB-2000
02-MAR-2000
11-MAR-2000
11-MAR-2000
07-JUN-2000
07-JUL-2000
01-AUG-2000
01-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
14-AUG-2000
01-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; immunosuppressive; antiarthritic; ss; antirheumatic; cytostatic; cardiant; vasotropic; cerebroprotective; nootropic; neuroprotective; antibacterial; virucide; fungicide; opthalmalogical; vulnerary; secreted protein; rheumatoid arthritis; vulnerary; secreted protein; cardiovascular disorder; cardiovascular disorder; cardiovascular disorder; cerebrovascular disorder; cerebral ischaemia; angiogenesis; nervous system disorder; Alzheimer's disease; infection; ocular disorder; corneal infection; wound healing; epithelial cell proliferation; corneal infection; wound healing; epithelial cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        skin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAS26580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200155322-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS26580;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123 CAGAAGCAAGAGATTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ageing; food additive; preservative; antiproliferative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard; cDNA; 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding
2000US-0186350.
2000US-019874.
2000US-0199874.
2000US-0199123.
2000US-0299467.
2000US-0211686.
2000US-02116840.
2000US-0211680.
2000US-0211680.
2000US-02118290.
2000US-0214518.
2000US-0224518.
2000US-0224518.
2000US-0224518.
2000US-0225213.
2000US-0225213.
2000US-0225214.
2000US-0225217.
2000US-0225217.
2000US-0225266.
2000US-0225275.
2000US-0225276.
2000US-0225277.
2000US-022527.
2000US-0225234.
2000US-022934.
2000US-022934.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-0180628
2000US-0184664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0179065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001WO-US01341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВΡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              759.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocular disorder;
```

ş

2000US-0230437 2000US-0230438 2000US-0231242 2000US-0231244 2000US-0231244 2000US-0231414 2000US-0231414 2000US-0231414 2000US-0231414 2000US-0231414

```
The invention relates to isolated nucleic acid molecules and their CC encoded secreted proteins. The nucleic acids and proteins are used to grevent, treat or ameliorate a medical condition in e.g. humans, mice, CC to a pathological condition. Antibodies to the proteins can also used in diagnosing a pathological condition or susceptibility concerns and in alleviating symptoms associated with the disorders and in CC include autoimmune diseases, g. radioimmunoassays or enzyme linked CC include autoimmune diseases e.g. remunatoid arthritis.

CC ardiovascular disorders e.g. neoplasms of the breast or liver, CC alzement's disease, infections caused by bacteria, viruses and fungic cardiovascular disorders e.g. cardiac arrest, cerebrovascular disorders e.g. corneal infection, and many other bused to aid wound healing and epithelial cell proliferation, to regenerate tissues and in chemotaxis. The polypeptides can also the cregenerate tissues and in chemotaxis. The polypeptides can also be compabilities, fat content, lipid, protein, carbohydrate, vitamins, cofactors and other nutritional components. The present corneal secreted protein of the invention.
                                   AAF16080
                                                    RESULT
                                                                                                                                                                                                                  DЪ
                                                                                                                                      Query Match
Best Local Similarity
Matches 18; Conserv
AAF16080 standard; cDNA; 932 BP
                                                                             Claim 1; SEQ ID No 759; 980pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New nucleic acid molecules encoding 461 human secreted proteins for diagnosing, preventing, treating or ameliorating medical conditions and used as food additives or preservatives.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-485/07/
P-PSDB; AAU16593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-NOV-2000

17-NOV-2000

17-NOV-2000

17-NOV-2000

17-NOV-2000

01-DEC-2000

01-DEC-2000

05-DEC-2000

05-DEC-2000

05-DEC-2000

06-DEC-2000

08-DEC-2000

08-DEC-2000

08-DEC-2000

08-DEC-2000

08-DEC-2000

11-DEC-2000

11-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HUMA-) HUMAN GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-NOV-2000;
17-NOV-2000;
17-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-488783/53.
                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ); 2000US-0249218

); 2000US-0249244

); 2000US-0249264

); 2000US-0249265

); 2000US-0249295

); 2000US-0249299

); 2000US-0249399

); 2000US-0250391

); 2000US-0250391

); 2000US-0251388

); 2000US-0251868

2000US-0251479

); 2000US-0251868

); 2000US-0251868
                                                                                                                                                      100.0%;
                                                                                                                                                3.7%; Score 18;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ruben SM;
                                                                                                                                        0;
                                                                                                                                   Mismatches
                                                                                                                                             DB
37;
                                                                                                                                                            22;
                                                                                                                              0,
                                                                                                                                                      Length 401;
                                                                                                                       0;
                                                                                                                    Gaps
```

0;

08-SEP-2000; 2
08-SEP-2000; 2
08-SEP-2000; 2
08-SEP-2000; 2
08-SEP-2000; 2
08-SEP-2000; 2
14-SEP-2000; 2
25-SEP-2000; 2
25-SEP-2000; 2
27-SEP-2000; 2
27-SEP-2000; 2
27-SEP-2000; 2
29-SEP-2000; 2
20-CCT-2000; 2
21-CCT-2000; 2
21-CCT

7 2000US -023299
7 2000US -023299
7 2000US -023299
7 2000US -023299
7 2000US -023398
7 2000US -023398
7 2000US -023398
7 2000US -0234240
7 2000US -0234274
7 2000US -0234274
7 2000US -023428
7 2000US -023428
7 2000US -023488
7 2000US -0235834
7 2000US -0235836
7 2000US -0235836
7 2000US -0235836
7 2000US -0235836
7 2000US -0236367
7 2000US -0236370
7 2000US -0246370
7 2000US -024677
7 2000US -024671
7

```
RESULT 10
AAN71108
ID AAN71
XX
AC AAN71
XX
DT 01-JA
XX
DE OPtim
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nephrotropic, antiinfective, gynaecological and antibacterial activities, and can be used in gene therapy. The prostate cancer antigen polynucleotides may be used for detection of prostate cancer, chromosome identification, as chromosome markers, and for numerous other diagnostic or research purposes. The prostate cancer antigens may be used to treat disorders such as neural, immune, muscular, reproductive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prostate cancer associated gene sequences, referred to cancer antigens, useful for treatment, prevention, and disorders such as prostate cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; prostate cancer; prostate cancer antigen; detection; diagnosis; neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular; vulnerary; gastrointestinal; nephrotropic; antiinfective; gynaecological; antibacterial; gene therapy; neural; immune; reproductive; renal; gastrointestinal; pulmonary; cardiovascular; proliferative disorder; wound; infectious disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gastrointestinal, pulmonary, cardiovascular, renal, and proliferative disorders, wounds, and infectious diseases. AAF16506 to AAF16514 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF15566 to AAF16505 encode the human prostate cancer associated proteins, called prostate cancer antigens, given in AAB56363 to AAB57302. The prostate cancer antigens can have neuroprotective, cytostatic, cardiactive, immunomodulatory, manual volumerary, gastrointestinal, cardiactive, immunomodulatory, manual cardiactive, gastrointestinal, g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-MAR-2000; 2000WO-US05988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200055174-A1
                      Optimized Escherichia coli aspC
                                                                 01-JAN-1980
                                                                                                                                                     AAN71108 standard; DNA; 1293 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HUMA-) HUMAN GENOME SCI INC (ROSE/) ROSEN C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB57303 represent sequences used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAF16080
                                                                                                                                                                                                                                                                  692
                                                                                                                                                                                                                                                                                     237 AATAAAGCTAAACCAGAG 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000-587513/55
DB; AAB56877.
                                                                                                                                                                                                                                                                  AATAAAGCTAAACCAGAG

    Page 979; 2338pp; English.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prostate
                                                                                                                                                                                                                                                                                                                                                    18;
                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ruben SM;
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                           BP; 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cancer antigen nucleotide sequence
                                                                                                                                                                                                                                                                                                                                           3.7%; Sc.
/ 100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                        A; 223
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ç
                                                                                                                                                                                                                                                                                                                                                                           Score 18;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                           211 G;
                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                             NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                           242 T;
                                                                                                                                                                                                                                                                                                                                                                         DB
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                               21;
                                                                                                                                                                                                                                                                                                                                                                                                                                           œ
                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                           other;
                                                                                                                                                                                                                                                                                                                                                                                             Length 932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ
                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               as prostate
diagnosis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO:515
                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
AAV40259
    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                    Brevibacterium lactofermentum; lysC; L-lysine; coryneform bacterium; aspartokinase; feedback inhibition; dihydropicolinate reductase; diaminopimelate decarboxylase; aspartate aminotransferase; ds.
                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Composite plasmids contg. multiple genes useful for prodn. of aminoacid(s), esp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \ensuremath{\mathsf{aspC}} gene; feedback inhibition; amino acid synthesis; composite plasmid; ss.
  Araki M,
                                        (AJIN ) AJINOMOTO CO INC
                                                                                      05-DEC-1996;
                                                                                                                               05-DEC-1997;
                                                                                                                                                                          22-JUL-1998
                                                                                                                                                                                                                   EP854189-A2
                                                                                                                                                                                                                                                                                                                                                                           Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Escherichia coli aspC gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAV40259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAV40259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1293 BP; 322 A; 331 C; 343 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAN71107, AAN71109-11 and AAP70696-97 and AAP70750, AAP70752-54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 25; 57pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Edwards MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (NUTR-) NUTRASWEET CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUN-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-JUN-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JAN-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO8700202-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  254 GCTGTTTGGTAAAGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132 GCTGTTTGGTAAAGGTAG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1987-021998/03.
DB; AAP70751.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; DNA; 1331
  Nakamatsu T,
                                                                                                                                                                                                                                                                                                                                                                           coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Taylor PP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          may be inserted into a composite plasmid a ction of amino acids. See also AAN71053-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              85US-0747732
                                                                                      96JP-0325659
                                                                                                                                 97EP-0121443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86WO-US01353
                                                                                                                                                                                                                                                            /product= "aspC"
                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.7%;
Sugimoto M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hunter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
  Yoshihara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fotheringham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in transcriptional units 
L-phenylalanine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 other;
    κ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1293;
```

Š 밁

and

0,:

Gaps

0

1998-379060/33. DB; AAW69553.

```
DI DE CONTROL DE CONTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
AAN71109
ID AAN71
XX
AC AAN71
XX
Composite plasmids contý. multiple genes in transcriptional units
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1987-021998/03.
P-PSDB; AAP70752, AAP71677-8.
                                                                                                                                                       Edwards MR,
                                                                                                                                                                                        (NUTR-) NUTRASWEET CO.
                                                                                                                                                                                                                                        24-JUN-1985;
                                                                                                                                                                                                                                                                                   24-JUN-1986;
                                                                                                                                                                                                                                                                                                                                 15-JAN-1987
                                                                                                                                                                                                                                                                                                                                                                       WO8700202-A
                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus licheniformis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alpha-amylase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha-amylase; feedback inhibition; amino acid synthesis;
composite plasmid; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pheA arof aspC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1980 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAN71109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAN71109 standard; DNA; 3659 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention describes a recombinant DNA autonomously sequence coding for an aspartokinase (AK) in which feedback inhibition a dihydropticolinate reductase (DHPR), a DNA sequence coding for dihydropticolinate reductase (DHPR), a DNA sequence coding for diaminopimelate decarboxylase (DHPS), a DNA sequence coding for aspartate aminotransferase (AAT). The present sequence coding for appresent invention, can be used for improving L-lysine products from the DNA and related products from the DNA can be used for improving L-lysine productivity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132 GCTGTTTGGTAAAGGTAG 149
||||||||||||
252 GCTGTTTGGTAAAGGTAG 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1331 BP; 330 A; 340 C; 350 G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Recombinant DNA autonomously replicable in coryneform bacteria used to produce L-lysine, codes for e.g. aspartokinase, dihydropicolinate reductase and synthase and di:amino-pimelate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 5; Page 37-38; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                               Taylor
                                                                                                                                                                                                                                 85US-0747732
                                                                                                                                                                                                                                                                       86WO-US01353.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= a
1259..2329
/*tag= b
2344..3534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       operon in plasmid pME219.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
69..1241
                                                                                                                                             ₽₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.7%; Sur
100.0%; Pr
... 0;
                                                                                                                                        Hunter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 18;
Pred. No.
                                                                                                                                      ,
MG
                                                                                                                     Fotheringham IG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 19;
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1331;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
```

δÃ

165 GGCCATTGGTGGTGCTGT 182

0,

0,

Gaps

0;

Length 3776; Indels

```
Query Match
Best Local Similarity
"hohes 18; Conserve
                                                                      Sequence 3776 BP;
                                              Novel EPH-related PTK cDNA clone Cek9 (given in AAQ90655) was isolated from a chick embryo library in lambda. Cek9 protein (AAR75707) is closely related to Cek5 (AAR75712). In adult tick9 expression is predominant in the thymus and detectable in brain, retin, kidney, lung and heart.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AAQ90655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 2; Page 50-53; 129pp; English.
                                                                                                                             Eph-related protein tyrosine kinase(s) - for monitoring and diagnosing
                                                                                                                                                                 WPI; 1995-215256/28.
P-PSDB; AAR75707.
                                                                                                                                                                                               Pasquale EB,
                                                                                                                                                                                                           (LJOL-) LA JOLLA CANCER RES
                                                                                                                                                                                                                                   03-DEC-1993;
                                                                                                                                                                                                                                                    07-SEP-1994;
                                                                                                                                                                                                                                                                      08-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                        W09515375-A.
                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                  Cek9; Eph;
prognosis;
                                                                                                                                                                                                                                                                                                                                               Gallus sp.
                                                                                                                                                                                                                                                                                                                                                                                        Eph-related PTK Cek9 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                              11-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ90655;
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAQ90655 standard; cDNA; 3776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2586 GCTGTTTGGTAAAGGTAG 2603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132 GCTGTTTGGTAAAGGTAG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3659 BP; 936 A; 911 C; 947 G; 865 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence may be inserted into a composite plasmid and used for the production of amino acids. See also AAN71053-55, AAN71107, AAN71109, AAN71111 and AAP70696-97 and AAP70750, AAP7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 38; 57pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - useful for prodn. of aminoacid(s), L-tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
    .larity 100.0%; | Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
18; Consert
                                                                                                                                                                                                                                                                                                                                                           protein tyrosine-kinase; PTK; cancer; diagnosis;
ss.
                                                                                                                                                                                           Sajjadi FG;
                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                             93US-0162809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ilarity 100.0%; so Conservative 0;
                                1005 A; 881 C; 941 G; 949 T; 0 other;
                                                                                                                                                                                                                                                94WO-US10140
                                                                                                                                                                                                                                                                                                             Location/Qualifiers
290..3311
                                                                                                                                                                                                                                                                                                         /*tag≃
                                                                                                                                                                                                                                                                                                        מ
Score 18; DB:
; Pred. No. 38;
0; Mismatches
                                                                                                                                                                                                           FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 18; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
         DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                esp. L-phenylalanine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 8;
38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3659;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                           tissues,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAP70752 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
```

271

```
RESULT 15
ABL10082
ID ABL10
XX
AC ABL10
                                                                                                                                                                                                       RESULT 14
AAX13059
                                                                                             망
                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                  Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                         A computer readable medium has been developed which has recorded on it 982 nucleotide sequences isolated from the Enterococcus faecalis genome. AAX12938 to AAX13919 represent these nucleotide sequences which are primary nucleotide sequences, also known as contigs. The computer-based system can identify fragments of the Enterococcus faecalis genome with commercial importance. The products can be used to detect the presence of Enterococcus faecalis in samples. They can also be used for diagnosing Enterococcal infection in an animal and monitoring progression of disease, and for identifying agents which can be used to modulate the growth or pathogenicity of Enterococcus faecalis, or another related organism, in vivo or in vitro. In particular the polypeptides encoded by the Enterococcus faecalis nucleotide sequences can be used in vaccines to prevent or attenuate an Enterococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated Enterococcus faecalis polynucleotides and polypeptides used to develop products for the detection of Enterococcus and for use in vaccines for prevention or attenuation of Enterococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-NOV-1997;
06-MAY-1997;
16-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 734-739; 2084pp;
                                                                                               2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterococcus faecalis; contig; detection; Enterococcal infection; vaccine; attenuation; computer readable medium; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAX13059;
  ABL10082;
                            ABL10082 standard; cDNA; 10432 BP
                                                                                                                                                                                                       Sequence 9813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09850555-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Enterococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Enterococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAX13059 standard; DNA;
                                                                                                                         34
                                                                                               ATTATTATCAGTGTGTTT 2490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1999-045171/04.
                                                                                                          ATTATTATCAGTGTGTTT 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCATTGGTGGTGCTGT 288
                                                                                                                                                    l Similarity
18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dillon PJ,
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              faecalis genome contig SEQ ID NO:122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             faecalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97US-0066009.
97US-0044031.
97US-0046655.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98WO-US08985
                                                                                                                                                                                                       3233
                                                                                                                                              3.7%; but
100.0%; Pr
7.20 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                       A; 1698 C; 2161 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kunsch CA;
                                                                                                                                                              Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                    Mismatches
                                                                                                                                                              38;
                                                                                                                                                                                                       2719
                                                                                                                                                                            20;
                                                                                                                                                    0;
                                                                                                                                                                                                       T; 2 other;
                                                                                                                                                                            Length 9813;
                                                                                                                                                    0
                                                                                                                                                 Gaps
                                                                                                                                                    0;
```

Search completed: October Job time: 142.109 secs

27,

2002,

20:42:22

0;

```
В
                                                Š
                                                                                                                                                                                                           $\times CCCCCCCCCCCCX \times \
                                                                                                 Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                        capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL040-ABL16175) and the encoded proteins (ABB57737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila; developmental biology; cell signalling; pharmaceutical; gene; ss.
                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                          at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                     specification,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID NO 24728;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated nucleic a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-656860/75.
P-PSDB; ABB65979.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                interactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-MAR-2002
                                                   170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (PEKE )
TTGGTGGTGCTGTTTGG
                           TTGGTGGTGCTGTTTTGG
                                                                                               ch 3.7%;
l Similarity 100.0%;
l8; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PΕ
                                                                                                                                                                                                           10432 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                     but was obtained in electronic
                                                                                                                                                                                                         2894 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Li
7035
                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                           2225 C;
                                                                                                    0,
                                                                                                                               Score 18; Pred. No
                                                                                                    red. No. 38;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polynucleotide
                                                                                                                                                                                                           2170
                                                                                                                                                                                                           ი;
                                                                                                                                                                                                           3143
                                                                                                                                                        23;
                                                                                                    0;
                                                                                                                                                                                                                                                                                     part of the printed format directly from
                                                                                                                                                                                                           7.
                                                                                                                                                     Length 10432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ
                                                                                                       Indels
                                                                                                                                                                                                           0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1000 or more and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24728
                                                                                                    0
                                                                                                    Gaps
                                                                                                                                                                                                                                                                                          WIPO
```

is

THIS PAGE BLANK (USPTO)

AC012273 Homo sapi AP001636 Homo sapi AC090309 Homo sapi AC090870 Rattus no AL513003 Oryza sat AC093459 Homo sapi

AX252413 AF184152

Sequence Piscirick Homo sapi Human DNA

```
Title:
Perfect score:
Sequence:
              Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Word
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 size
                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                       Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB DB
                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OLIGO_NUC Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-677-374-1
486
1 atgaacagaggat
              Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1797656 seqs, 10463268293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  October 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      atgaacagaggatgtttgca...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_pat:*
gb_ph:*
                                                                                                                                                                em_htg_hum: *
em_htg_inv: *
em_htg_other: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_pr:*
                                                                                                                                                                                                                                                                           em_pat:*
em_ph:*
em_pl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_ro:*
gb_sts:*
gb_un:*
                                                                                                                                                                                                                                            em_ro:*
em_sts:*
                                                                                                                                                                                                                                                                                                                                        em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                     em_fun:*
em_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_v1:*
em_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_p1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_ov : *
                                                                                                                                                                                                                               em_un:*
                                                                                                                                                                                                                  em_vi:*
                                                                                                                                                                                                                                                                                                                         em_ov:*
                                                                                                                                                                                                                                                                                                                                                                      em_mu:*
                                                                                                                                                                                                                                                                                                                                                                                     em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002, 18:35:09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chosen
                Ħ
                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Search time 940.383 Seconds
(without alignments)
10815.053 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ....aagtcatttcaacagaaaaa
              Description
                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                              RESULT 1
AX252413
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
BASE COUNT
ORIGIN
                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                        TITLE
                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5
AX252413
                                                                                     Burzio,L.

Burzio,L.

Fish vaccine against piscirickettsia Patent: WO 0168865-A 5 20-SEP-2001; Aqua Health (Europe) Limited (GB)
                                                                                                                                                1 (bases 1 to 489)
Simard,N., Brouwers,H., Jones,S.F., Griffiths,S.,
                                                                                                                                                                Piscirickettsia.
1 (bases 1 to 489)
                                                                                                                                                                                                            Piscirickettsia salmonis.
Piscirickettsia salmonis
                                                                                                                                                                                                                                                              AX252413.1 GI:15985721
                                                                                                                                                                                             Bacteria; Proteobacteria;
                139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0
100.0
4.3
4.3
4.3
            /organism="Piscirickettsia salmonis"
/db_xref="taxon:1238"
79 c 144 q 127 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                  71409
1151673
1160970
1180633
1181654
1196247
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
274307
27430
                                                         Location/Qualifiers
1. .489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146327
160394
161582
161586
165208
183317
192810
252571
3875
26058
28798
31147
                                                                                                                                                                                                                                                                                         489 bp from Patent WO0168865.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
2
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX252413

AP000576

AL162253

AP0012273

AP0012273

AP0012273

AP0012273

AP0013459

AC093459

AC093459

AC093459

AC093459

AC092357

AC0110102

AC018318

BLAJ5061

AC087102

AC087102

AC0101513

AC0047166

AC095401

AC095561

AC09566

AC09570

AC007916

AC007916

AC007916

AC016666

AC0166660

AC0166660
                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                 gamma
                                                                                                                                                                                               subdivision; Piscirickettsia group;
```

AL626767 Mus muscu AC09878 Mus muscu AC09878 Mus muscu U22357 Drosophila AC110102 Rattus no U95370 Bacillus 11 AC018318 Drosophil AJ005061 Bacillus AF0214666 Corynebac AC004715 Drosophil AC0987102 Rattus no AC010138 Homo sapi AC003519 Drosophil AF411058 Homo sapi AC107910 Homo sapi AC107910 Homo sapi AC107956 Homo sapi AC107957 Homo sapi AC107957 Homo sapi AC105755 Homo sapi AC105754 Homo sapi

DNA

linear

PAT 05-OCT-2001

salmonis

Valenzuela, P.

JOURNAL Submitted (10-SEP-1999) Biochemistry & Microbiology, University of Victoria, Petch Building, PO Box 3055, Victoria, BC V8W 3P6, Canada source	SOURCE Piscirickettsia salmonis. ORGANISM Piscirickettsia salmonis Bacteria; Proteobacteria; gamma subdivision; Piscirickettsia group; Piscirickettsia salmonis Bacteria; Proteobacteria; gamma subdivision; Piscirickettsia group; REFERENCE 1 (bases 1 to 4983) AUTHORS Kuzyk,M.A., Burian,J., Thornton,J.C. and Kay,W.W. Identification of a genus-common Rickettsial surface antigen in the salmonid pathogen Piscirickettsia salmonis REFERENCE 2 (bases 1 to 4983) AUTHORS Kuzyk,M.A. and Kay,W.W. TITLE Direct Submission	AFIBA152 DEFINITION Piscirickettsia salmonis alanine racemase (alr) gene, partial cds; accession ACCESSION AFIBA152 ACCESSION AFIBA153 ACCESSION AFIBA152 ACCESSION AFIBA152 ACCESSION AFIBA153 ACCESSION AFIBA152 ACCESSION AFIBA153 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA155 ACCESSION AFIBA154 ACCESSION AFIBA154 ACCESSION AC	181 241 301 301 361	Query Match Best Local Similarity 100.0%; Score 486; DB 6; Length 489; Best Local Similarity 100.0%; Pred. No. 5.2e-248; Matches 486; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Qy 1 ATGAACAGAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGGTTGTTTTTAGTTGGC 60 1
repeat_region gene	cDS	gene	gene ,	CDS CDS
/Organism="Piscirickettsia salmonis" /organism="TLF-89" /strain="TLF-89" /db_xref="taxon:1238" /clone="PB12" /insertion_seq="insertion sequence-like element" 35603846 complement(38424561) /gene="tupA" /complement(38424561) /gene="tupA" /codon_start=1	VE	/Codon_start=1 /transl_table=11 /transl_table=11 /product="DNA, repair enzyme RadA" /protein_id="AAG16998.1" /db_xref="cl: 10441344" /fab.xref=cl: 10441344" /transl_table=11 /db_xref=cl: 10441344" /transl_tation="MSKOKNOYVCSDCGGIAKKWLGQCPHCQQWNSLSEVKEVLPNRPGRSQRFAGFAGIDAPKVKCLSEITPEQISRQPYGICEEDRVLLGGGLYHGAVILLGGDPGRSQRFAGFAGIDAPKVKCLSEITPEQISRQPYGICEEDRVLLGGGLYHGAVILLGGDPGICKSTLLQTSVVCTQFGKVLYYTGEESLEQVTLRSKRLGLSQDVDLRLLAETQVER LIKAAEIEDPKVLLVUDSIQTIFTESLQSAPGGVAQVRESAALITQFAARTGTCLFLVG HVTKEGALAGPRVLEHMVDTVLYFEGEGDSRFFLLRAVKNRFGAANELGIFAMFEGGL KTVSNPSALFLSRYEDLQPGSVVMVANEGTRPLLVEYQALVDESHSSNPRRIAVGLDQ CRLAMLLAVINHGGTASYDDVFINVYGGMKITETAADLALLACVSSLRGKALSQE DALATL" DALATL" 2834. 3322 /gene="ospa"	/codon_start=1 /transl_table=11 /evidence=not_experimental /evidence=not_experimental /protein_id="AAGI7002.1" /product="BAX" /protein_id="AAGI7002.1" /db_xref="G::10441348" /db_xref="G::10441348" /db_xref="G::10480/ITFAYLAQQPLFSAPTSKTQINTAYSQDIQSIKQEFII KITQSENTINQILICAKRQHILISLIQKKSLSKOEITQIQALAKQYKLNNLHFKHPQDFS LLLKRVDIIPNALISAQAINESNWGSSFFAVEGNNFFGMRCHYPGCGIIFKARPANN HEVANYSSMTASVRAYIHTLXTHNAYQALRDLRAHMRANHQDVSAFKLAEGLTAYSIK GTKYVELIQTIITRYLSKESTSQIP" GTKYVELIQTIITAYLSKESTSQIP" /evidence=experimental 13732743 /gene="rada" /evidence=experimental	<pre><1501 /gene="alr" /codon_start=1 /codon_start=1 /trans1_table=11 /evidence-not_experimental /protein_id="Asd17001.1" /protein_id="Asd17001.1" /db_xref="G1:10441347" /trans1ation="NSAAIFNESYERYDWVRPGIMLYGISPFADKNGVDLELQPVMHV VSRLISVKOLRQGESVGYGATWQCPEDMQVGILSLGYGDGYPRLAASGTPFLVRGQRC ALIGRVSDMAIAIDLRRCPDAGVGEAVTVWGQDLPVEEIARHVGTIAYELVCNMPLRA complement(5261257) /gene="bax" complement(5261257) /gene="bax"</pre>

```
repeat_region
BASE COUNT 1260
ORIGIN
                                                                                                                                                                                                                                                                                                  RESULT 3
AP000576
                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                 DEFINITION
     AUTHORS
                                                                                                          REFERENCE
                                                                                                                                                                                                                                ACCESSION
                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                    JOURNAL
                                                                                          AUTHORS
                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                        3314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA 360
                                                                                                                                                                                                                                                                                                                                                                        GAAAAA 3319
                                                                                                                                                                                                                                                                                                                                                                                                       GAAAAA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGAGATTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCTAAACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTTGGGTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGCTGTTGTTGGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGCCCAGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATACAGGCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCTAAACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalla; Eutherla; Primates; Catarrhini; Hominidae;
1 (bases 1 to 121922)
Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Se
Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Saka
Homo sapiens 121,922 genomic DNA of 11912
Published Only in DataBase (1999) In press
2 (bases 1 to 121922)
Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Se
                                                                                                                                                                                                                                    Arvuus/o 121922 bp DNA linear HTG 25-AUG
Homo sapiens chromosome 11 cione CMB9-6J10 map 11q12, WORKING
SEQUENCE, 12 unordered pieces.
                                                                                                                                                           Homo sapiens
                                                                                                                                                                      HTG; HTGS_PHASE1; HTGS_DRAFT.
Homo sapiens DNA, clone:CMB9-6J10.
                                                                                                                                                                                                            AP000576.4 GI:9927276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id-"aag16999.1"
/protein_id-"aag16999.1"
/db_xref-"GI:10441345"
/translation-"mdltlistecviddfcQellpQwnailledtnkkrnkpsQwsts
eimtimiyfhksnyrnfkmyylhvikgsmykyfpnsvsynrfvelmpsillplcffia
aQgktafgiyfvdstilrycheekrasQnrafkglakkskstmgwyygfklhiivndmg
elmafkmskattddrvvlpkmaenltgkiigdkgyisQklfdQlyekglqlttkirkn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MKNKLVLMIDKILLKKRGIIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="transposase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             778 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1265 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 486; DB 1; Pred. No. 4.6e-248; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1578 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 4983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
   Hong-Seog, P.,
                                                                      Hong-Seog, P.,
and Sakaki, Y.
                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                               HTG 25-AUG-2000
2, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                           3313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

밁 Ş В Ş B Ş

δÃ

밁 Ş 밁 δÃ 밁 δÃ В Š В

Q

멍

LOCUS

```
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555, Japan (E-mail:hattori@gsc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/.Tel:81-42-778-9923, Fax:81-42-778-9924)
On Aug 26, 2000 this sequence version replaced gi:8118784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y. Direct Submission
Submitted (08-007-1999) Masahira Hattori, The Institute of Physical
Chemistry: Dye-terminator ET-amersham; 100% of reads Assembly program: Phrap; version 0.990329 Consensus quality: 118280 bases at least Q30 Consensus quality: 119669 bases at least Q30 Consensus quality: 120421 bases at least Q20 Insert size: 120822; sum-of-contigs Quality coverage: 12.41x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                       Center project name: HumDraftll Center clone name: CMB9-6J10
                                                                                                                                                                                                                                                                  Sequencing vector: PCR products; 100% of reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site: http://hgp.gsc.riken.go.jp/
Contact: hattori@gsc.riken.go.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: RIKEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center: RIKEN Genomic Sciences Center(GSC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---- Genome Center
```

NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon preserved as it is available and the accession number will be

94512 103560: CONLLY VI 103561 103660: gap of 100 bp 103661 111843: CONTIG of 8183 bp in ler 111844 111943: gap of 100 bp 111944 116839: CONTIG of 4896 bp in ler * 116840 116939: gap of 100 bp * 116940 119647: CONTIG of 2708 bp in ler * 116848 119747: gap of 100 bp NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved 25420 43637 62264 74571 84927 94512 103661 111944 1116940 12091 25320 25419; gap of 100 bp 25420 43536: contig of 18117 bp in 43537 43636: gap of 100 bp 43637 62163: contig of 18527 bp in 62164 62263: gap of 100 bp 62264 74470: contig of 12207 bp in 74471 74570: gap of 100 bp 94412 94511: 74571 71 74570: gap of 100 bp 101771 84826: contig of 10256 bp in 1027 84926: gap of 10256 bp in 1627 94411: contig of 9485 bp in 1627 94511: gap of 100 bp 12 94511: gap of 100 bp 12 103560: contig of 9049 bp in 1651 103560: 25319 contig of
43536 contig of
62163 contig of
74470 contig of
84826 contig of
94411 contig of
113560 contig of
111843 contig of
111843 contig of
111843 contig of
119647 contig of
120811 contig of
120812 contig of 25319: contig of 25319 bp in 10256 9485 9049 8183 25319 bp in 18527 bp in 18527 bp in 12207 bp in 10256 bp in 9049 bp in 4896 bp in 1064 bp in 1064 bp in 1064 bp in 10611 bp in 25319 18117 18527 18527 12207 bp in length 'n in length length

```
COMMENT
                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                         RESULT 4
AL162253
LOCUS
                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
AL Submitted (20'-MAR-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquirles: humquery@sanger.ac.uk Clone requests: clonerequest@sanger.ac.uk Puring sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations annotation may not be found in the sequence wariation scorresponding to the overlapping clone name. Note that the only a small overlap as described above. This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate
                                                                                                                                                                                                                                                                                                                                                                                                     70697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     34 ATTATTATCAGTGTGTTTTTA 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                         Local 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                      ATTATTATCAGTGTGTTTTTA 70717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                    Clark
                                                                                                                                                                                                                                  Eukaryota;
                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                        AL162253

AL162253

Human DNA sequence from clone RP11-574F11 on chromosome 9, complete
                                                                                                                                                                                                                                                                                  AL162253.17
                                                                                                                                                                                                         (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35022 a
                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative 0;
                                                                                                                                                                                       ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119748 120811: contig of 1064 bp in length 120812 120911: gap of 100 bp 120912 121922: contig of 1011 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
120912, 121922
/note="assembly_fragment"
23866 c 24325 g 37609 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment"
119748. .120811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
116940. .119647
                                                                                                                                                                                                                                                                           GI:13677203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment clone_end:T7 vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
103661. .111843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="assembly_fragment clone_end:SP6 vector_side:left"
مرماد
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
25420. 43536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="CMB9-6J10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .103560
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 21; DB 2;
Pred. No. 5;
                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1100 others
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 121922;
                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                        JOURNAL
REFERENCE
                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                            AC012273
                                                                                                                                                                                           ACCESSION
                                            AUTHORS
                                                                                                                                                                                                                                                                                          Db 96974
                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local S
                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                              44360 a
```

В

```
411 AGGGCAGAAGCAAGAGATTTA 431
Birren,B., Linton,L., Nusbaum,C. and Lander,E.

Homo sapiens, clone RP11-1K7

(bases 1 to 160394)

Birren,B., Linton,L., Nusbaum,C., Lander,E., Allen,N., Anderson,M., Serna,N., Beckerly,R., Boguslavkiy,L., Boukhgalter,B., Baldwin,J., Barna,N., Beckerly,R., Boguslavkiy,L., Boukhgalter,B., Cooke,P., DeArellano,K., DeWar,K., Domino,M., Donelan,L., Doyle,M., Ferreira,P., FitzHugh,W., Forrest,C., Funke,R., Gage,D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGCCAGAAGCAAGAGATTTA 96994
                                                                                                                                                                                            Mammalia; Eutheria; Primates; Craniata; Vertebrata; Euteleostomi; (bases 1 to 160394)
                                                                                                                                                                                                                                                                                                 AC012273
AC012273.3 GI:14595892
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP.
                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens clone RP11-1K7,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IMPORTANT: This sequence is not the entire insert of clone RP11-574F11 It may be shorter because we sequence overlapping sections only once, except for a 100 base overlap. The true right end of clone RP11-574F11 is at 146327 in this sequence. The true left end of clone RP11-635N21 is at 62948 in this sequence. The true right end of clone RP11-12D24 is at 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      http://www.sanger.ac.uk/Projects/C.elegans/wormpep This sequence was generated from part of bacterial clone contigs of human from part of bacterial clone contigs of human type chromosome? Constructed by the Sanger Centre Chromosome? Mapping of Pieter de Jong. RPII-574F11 is from the library RPOI-11.2 constructed by the group http://www.chori.org/bacpac/home.htm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chemistry or covered by high quality data (i.e., phred quality > 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one MI3 subclone; and the abbreviations are used to associate primary accession numbers give SWISSPROT: Tr:. TREWHI. No. undburen. Trecomments Em:, EMBL; SW:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         database can be found at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        data."
84304...84306
/note="Single clone region. Assembly confirmed by
restriction digest data."
a 29767 c 29483 g 42717 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84304 ... 84605
/note="Sequence from overlapping clone ba635N21 (AL354744). Assembly confirmed by restriction digest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /Clone="RP11-574F11"
/Clone_lib="RPCI-11.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1. .146327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.38; Su
100.08; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TREMBL; Wp:, WORMPEP; Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 21; DB 9;
Pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                        bp DNA linear |
WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 146327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                               HTG 04-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                  4 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on the WORMPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  given
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Consensus quality: 159424 bases at least 040
Consensus quality: 159851 bases at least 030
Consensus quality: 160001 bases at least 020
Insert size: 162000; agarose-fp
Insert size: 162000; agarose-fp
Ouality coverage: 14.4 in 020 bases; agarose-fp
Ouality coverage: 14.6 in 020 bases; agarose-fp
Ouality coverage: 14.6 in 020 bases; agarose-fp
Ouality coverage: 14.6 in 020 bases; agarose-fp

* NOTE: This is a 'working draft' sequence. It currently
consists of 4 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.

This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Lehozak, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Meldrim, J., Morrow, J., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., Peterson, K., Pollara, V., Riley, R., Roy, A., Santos, R., Severy, P., Stange Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Tirell, A., Vassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Thenson, M., Wassiliev, H., Vo, A., Wheeler, J., Wu, X., Wassiliev, H., Vo, A., W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (22-OCT-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA ON JUL 4, 2001 this sequence version replaced gi:13940700. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wyman, D., Ye, W.J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        be preserved
                                                                                                                                49405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: sequence_submissions@genome.wi.mit.edu
----- Project Information
Center project name: L1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97675; or 100 bp in length 97676 97775; gap of 100 bp 97776 160394; contig of 62619 bp in length Location/Qualifiers 1. .160394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 16762: contig of 16762 bp in length
16763 16862: gap of 100 bp
16863 20224: contig of 3362 bp in length
                                                                                                                                ø
                                                                                                                                                                                                                                                                                                    /note="assembly_fragment"
97776. .160394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                        /note-"assembly_fragment"
20325. .97675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                        /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="RPCI-11 Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="RP11-1K7"
                                                                                                                            ector_side:right"
32013 c 31371 g
                                                                                                                                                                                                           Lone_end:T7
    4.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .20224
    21;
                                                                                                                                47305 t
    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Male
2
Length 160394;
                                                                                                                                300 others
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
AC090309/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db 81250 AAAGCTAAACCAGAGTTTGGA 81270
                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AP001636/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                               ocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 100.0%; Matches 21; Conservative
                                                                                                                   AUTHORS
                                                                                                                                                                               TITLE
                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 ATTATTATCAGTGTGTTTTTA 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGCTAAACCAGAGTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTATTATCAGTGTGTTTTTA 81902
Birren,B., Linton,L., Nusbaum,C., Lander,E., Allen,N., Anderson,S Barna,N., Bastien,V., Boguslavkiy,L., Boukhgalter,B., Brown,A., Camarata,J., Campopiano,A., Choepel,Y., Collangelo,M., Collins,S., Collymore,A., Cooke,P., DeArellano,K., Dewar,K., Diaz,J.S., Dodge,S., Faro,S., Ferreira,P., FitzHugh,W., Gage,D., Galagan,J., Gardyna,S., Ginde,S., Goyette,M., Graham,L., Grand-Pierre,N., Hagos,B., Heaford,A., Horton,L., Hulme,W., Iliev,I., Johnson,R.,
                                                                                                                                                                         Birren,B., Linton,L., Nusbaum,C. and Lander,E. Homo sapiens chromosome 11, clone RP11-142C4
                                                                                                                                                                                                                                                                                                                                                 IN PROGRESS
AC090309
                                                                                                                                                                                                                                                                                                                                                                   AC090309 161586 bp DNA linear Homo sapiens chromosome 11 clone RP11-142C4 map 11, IN PROGRESS ***, 1 ordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japa (E-mail:hattori@gsc.riken.go.jp/, NRL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)
On Dec 7, 2001 this sequence version replaced gi:9927280.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (05-APR-2000) Masahira Hattori,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 161582)
Hattori, M., Ishii, K., Toyoda, A., Taylor, T.D., Hong-Seog, P., Fujiyama, A., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complete sequence AP001636
                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                   HTG;
                                                                                                                                                                                                                                                                                                                                   AC090309.4 GI:15055316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AP001636.4 GI:17425232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens genomic DNA, chromosome 11q,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AP001636
                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens DNA, clone:RP11-142C4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48492
                                                                                                                                     (bases 1 to 161586)
                                                                                                                                                                                                                 (bases 1 to 161586)
                                                                                                                                                                                                                                                                                                               HTGS_PHASE2; HTGS_FULLTOP; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.3%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۵ı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .161582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="RP11-142C4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /chromosome="11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31636 с
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 21; DB 9
Pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161582 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 4.9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49249
                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 161582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The Institute of Physical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone: RP11-142C4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                         *** SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRI 08-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                   Anderson, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

REFERENCE AUTHORS

```
ACCESSION
VERSION
                                                                                                                                                                                                                                RESULT 8
AC098770/c
                                                                                                                          KEYWORDS
                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                         Local
Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                          AC098770

165208 bp DNA linear HTG 20-DEC-2001
****, 62 unordered pieces.

Progress
                                                                      Rattus norvegicus
                                                                                                                      AC098770.2 GI:17974352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            * NOTE: This is a 'working draft' sequence. It currently consists of I contigs. Gaps between the contigs are represented as runs of N. The order of the pieces to fthe gaps between them are based on estimates that have the finished sequence will be replaced the accession number will be preserved.

161586: contig of 161586 bp in length.
                                                                                                 Norway rat
                                                                                                                                                                                                                                                                                                                                                               ch .1.Similarity 100.0%; Sco.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., MacConald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Plunkhang, P., Plerre, N., Pollara, V., Raymond, C., Retta, R., Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Peterson, K., Roy, A., Santos, R., Schuer, S., Schupback, R., Seaman, S., Severy, P., Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Traves, M., Travis, N., Trigilio, J., Vassiliev, H., Viel, N., Zembek, L., Zimmer, A., and Zody, M., Voung, G., Zalnoun, J., Vo, A., Direct Submission, A., and Zody, M., Voung, G., Zalnoun, J., Vo, A., Direct Submission, A., and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48496
                                                                                                              HTGS_PHASE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (17-FEB-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Aug 1, 2001 this sequence version replaced g1:14595864.

Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center code: WIBR
Web Site: http://www-seq.wi.mit.edu
Contact: sequence_submissions@genome.wi.mit.edu
Project Information
Center project name: L12578
Center clone name: 142_C_4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                          /Clone_lib≈"RPCI-11 Human Male BAC"
31637 c 32204 g 49249 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="RP11-142C4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /map="1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /chromosome="11"
                                                                                                                                                                                                                                                                                                                                                               Score 21; DB 2; Length 161586; Pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            estimates that have
                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                      0
```

```
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                         Center: Baylor College of Medicine
Web site: http://www.hgsc.bom.tmc.edu/
Contact: hgsc-help@bom.tmc.edu/
Center project Information
Center project Information
Center project name: GH39-113M1
Assembly program: phrap; version 0.990329First call to
Consensus quality: 136180 bases at least 040
Consensus quality: 14699 bases at least 040
Consensus quality: 151851 bases at least 020
Ouality coverage: 0x in 020 bases; agarose-fp estimation
Quality coverage: 2.4x in 020 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORE 1 (bases 1 to 165208)

Alsbrooks, J., Andams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Bowien, J., Bimage, K., Blankenbur, A., Blanks, T., Banks, T., Barbrooks, S., Brieva, M., Brown, E., Brown, M., Bryant, N., Bouck, J., Carter, P., Brietett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Cher, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Chen, P., Chen, C., C
* NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).

* NOTE: This is a 'working draft' sequence. It currently is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (01-NOV-2001) Human Genome Sequencing Center, Depar of Molecular and Human Genetics, Baylor College of Medicine, Baylor Plaza, Houston, TX 77030, USA
On Dec 20, 2001 this sequence version replaced g1:16572814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases_1 to 165208)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department
```

COMMENT

```
as
be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             runs of N, but the This record will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ins of N, but the exact sizes of the gaps are unknown.
is record will be updated with the finished sequence
soon as it is available and the accession number will
preserved.
   103474
103474
103474
103572
106532
106532
110143
1110143
1110261
111261
111261
1114069
114616
118642
118642
118642
118642
118642
                                                                                                                                                                                                                                                                                                                                                                                                         3813
3913
10889
110989
110989
1165188
165188
165243
331993
337668
337668
43128
43128
43128
43128
43128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
63128
   113968:
116615:
116615:
116715:
118741:
118741:
120498:
120598:
122341:
122441:
                                                                                                                                                                                                              112160:
112260:
                                                                                                                                                                                                                                                                                       81009
83324
83324
83424
83424
87388
87388
87486
91076
91176
94176
94369
94369
94369
94369
94369
100987
101087
101087
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
103473
1034
                                                                                                                                                                                                                                                     110242:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77330:
79217:
79317:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             216242:
32092:
37667:
377667:
43027:
43127:
454125:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
550730:
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3912:
10888:
10988:
16417:
16517:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3812:
                                     gap of contig gap of contig
                                                                                                                                                                                                                                                                                         gap of
contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                   gap of gap of gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of contig gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of contig gap of contig
                                                                                                                                                                                                                                                                   gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f unknown
g of 5429
f unknown
g of 4552
   unknown
of 1918
unknown
of 1708
of 1708
unknown
of 2547
unknown
of 1926
unknown
of 1757
unknown
of 1757
unknown
of 1743
unknown
of 1743
unknown
of 2186
                                                                                                                                                                                                                                                                                                                                                                                   of 3588
unknown
of 3093
unknown
of 3024
unknown
of 3494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
of 3152
unknown
of 2771
unknown
of 4230
unknown
of 3088
unknown
of 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
of 3728
unknown
of 4422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
of 5260
unknown
of 2288
unknown
of 5215
unknown
of 4409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 2215
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
of 5575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 4973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 3812
unknown
of 6976
                                                                                                                                                                                                                                                                   unknown
of 3611
                                                                                                                                                                                                                                                                                                                                              unknown
of 2386
                                                                                                                                                                                                                                                                                                          of 2858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 3964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 5750
                                     7 bp in length
1 length
5 bp in length
1 length
7 bp in length
1 length
1 length
5 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp in l
length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp in ]
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
bp in ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bp in .
length
                                                                                                                                                                         bp in l
                                                                                                                                                                                                                                                                                                                                              length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                   bp in
lengt
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in 1
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp in l
   length
bp in 1
                                                                                                                                                                                                                                ďď
                                                                                                                                                                                                                                                                     ďq
                                                                                                                                                                                                                                                                                                          dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ďφ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                            length
                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
   length
                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                              RESULT 9
CNS07EFI/c
LOCUS
                                                                                                                                                                                                                                                                                                            DEFINITION
   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        37871
                                                                                                                                                                                                                                                                                                                                                                                                                                                              235
                                               CNS07EFI

CNS07EFI

CNS07EFI

IN Oryza sativa chromosome 12 clone OSJNBa0009F13, *** SEQUENCING IN

PROGRESS ***, in ordered pieces.

AL513003

AL
                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATAAAGCTAAACCAGAGT 255
                                       Delseny,M., Robe
Artiguenave,F.,
Weissenbach,J.
Oryza sativa
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144683
145835
147138
147138
147138
148719
148719
150492
151048
151748
151748
151748
151748
151748
151748
151748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141436
141536
142774
142874
144583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139436
139536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136075
137662
137762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134383
135975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132996
133096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130423
130523
131814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126816
126916
128106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148618
148618
150391
150491
15147
151747
151747
153059
154185
154285
154285
154285
155534
155534
157043
157043
                       chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             147237:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145934:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145834:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144582:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141535:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131913:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142873:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124727:
126815:
126915:
128105:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36074:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31813:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig gap of contig gap of contig gap of contig gap of gap of gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of contig gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig gap of contig gap of contig gap of contig gap of contig contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 21; DB; Pred. No. 4.9
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                       12
                     sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
of 1249
unknown
of 1409
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
of 1203
unknown
of 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
of 1587
unknown
of 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
of 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
of 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
of 1673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
of 1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
of 1709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
of 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
of 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
of 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
of 1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
of 2088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp in length bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
bp in 1
length
bp in 3
length
bp in 1
length
bp in 1
length
length
bp in 1
length
bp in 1
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp in 1
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 165208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

0

REFERENCE

```
Db 67144 TTGGAAAAGGTAAAAGCAGGG 67124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256 TTGGAAAAGGTAAAAGCAGGG 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
Sequencing vector: MI3; 5%
Sequencing vector: MI3; 5%
Chemistry: Dye-primer ET; 0% of reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                           Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                        Center project name: H_NH0499M11
                                                                                                                   Center: Washington University Genome Sequencing Center code: WUGSC
                                                                                                                                                       Submitted (25 AUG-2001) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, On Feb 7, 2002 this sequence version replaced gi:18308909.
                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                       Waterston, R.H. 191454)
                                                                                                                                                                                                                                                                                  The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                        Mammalia, Eutheria, Pr. 1 (bases 1 to 191454)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                             AC093459.4 GI:18584937
                                                                                                                                                                                                                                                                                                                                                                                   numan
                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE, 3 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMPORTANT: This sequence is unfinished and does not necessarly represent the correct sequence work on the correct sequence is in progress and the release of this data is continue. The sequence may be contaminated with foreign sequence may be contaminated with foreign sequence work.

** NOTE: This is a 'working draft' sequence.

** This sequence will be replaced.

** by the finished sequence as soon as it is available and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52033 a
                                                                                                                                                                                                                                                                                                                                                                     HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (05-FEB-2001) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY Cedex - FRANCE (E-mail : Seqref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                      sapiens chromosome 2 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 183317)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Organism="Oryza sativa"
Cultivar="Nipponbare"
/Sub species="japonica"
/Gb_xref="taxon:4530"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="OSJNBa0009F13"
/clone_1ib="CUGI Nipponbare BAC"
1 38000 c 38408 g 54873 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            www.genoscope.cns.fr)
NT: This sequence is unfinished and does not necessarly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.08; Pr
100.08; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 21; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                   clone RP11-499M11, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
0. 4.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 183317;
                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         HTG 07-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                     COMMENT
                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                         RESULT 11
AL626767/c
                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                               Db 127210
                                                                                                            JOURNAL
                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                           AL626767
```

COMMENT

REFERENCE AUTHORS TITLE REFERENCE

JOURNAL

AUTHORS TITLE

JOURNAL

KEYWORDS SOURCE ORGANISM

VERSION ACCESSION DEFINITION

AC093459/c

Matches

```
Matches 21; Consciu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240 AAAGCTAAACCAGAGTTTGGA 260
                                           Burton, J.

Direct Submission
Submitted (10-OCT-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk clonerequest@singer.ac.uk clone on Oct 11, 2001 this sequence version replaced gi:16031460.
         Center project name: bM421C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGCTAAACCAGAGTTTGGA 127190
                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                       AL626767.2 GI:16073773
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP.
                                                                                                                                                                                                                                                                                                                                      MIS MUSCULUS CHIOMOSOME 4 CLONE RP23-421C7, *** SEQUENCING IN
AL626767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chemistry: Dye-terminator Big Dye: 100% of reads Assembly Program: Phrap: version 0.990319 Consensus quality: 180361 bases at least 040 Consensus quality: 180903 bases at least 030 Assert size: 184000; agarose-fp Quality coverage: 8.23 in 020 bases; agarose-fp Quality coverage: 8.23 in 020 bases; sum-of-contigs Quality coverage: 7.92 in 020 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      * NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is runs of N, but the exact sizes of the gaps are unknown. This record will be updatted with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57526 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ilarity 100.0%; so
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_name:Contig17"
75644 191454
/note="assembly_name:Contig18"
a 36639 c 38791 g 58298 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig1"
10027. .75543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="RP11-499M11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .191454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9926: contig of 9926 bp in length 10026: gap of unknown length 15543: contig of 65517 bp in length 15643: gap of unknown length 191454: contig of 115811 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 21; DB 2;
Pred. No. 4.8;
                                                                                                                                                                                                                                                                                                                                                                                        192810 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 191454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,0
```

```
FEATURES
      misc_feature
                                              misc_feature
                                                                                                              misc_feature
                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Insert size: 190910; sum-of-contigs
Insert size: 213770; 3.4% error; agarose-fp
Omality coverage: 8.22x in Q20 bases; sum-of-contigs Quality
coverage: 7.45x in Q20 bases; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Assembly program: XGAP4; version 4.5 sequencing vector: plasmid; L08752; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Consensus quality: 18761 bases at least Q40 consensus quality: 188634 bases at least Q30 consensus quality: 189284 bases at least Q20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence.
This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fragment_
60178. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tragment_
57171. .6
                                                /note="assembly_fragment:04437
fragment_chain:4"
145299. .148627
                                                                                                                                                                                                                                                                                                      /note="assembly_fragment:00677
fragment_chain:3"
120398. .124934
                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment:05128
fragment_chain:2"
116404...120297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone_end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:10090"
/chromosome="4"
      /note="assembly_fragment:05331"
148728. .150958
                                                                                                                              fragment_
                                                                                                                                                                                            /note="assembly_fragment:03420
fragment_chain:3"
                                                                                                                                                                                                                                        /note="assembly_fragment:02132
fragment_chain:3"
125035. .128604
                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment:03646
fragment_chain:2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment:03792
fragment_chain:2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment:00203
fragment_chain:2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment:02444
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment:02852
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment:00503
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="RP23-421C7"
/clone_lib="RPCI-23"
                                                                                                                                  /note="assembly_fragment:03428
fragment_chain:4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment:03381
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment:00217
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        [ragment_chain:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment:02908"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .103843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 93884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
AC098728/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db 130405 TGGTGGTGCTGTTTTGGGTGG 130385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 21; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      171 TEGTEGTECTETTTEGETEG 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                    Sequencing vector: M13; %
Sequencing vector: M13; %
Sequencing vector: plasmid; %
Chemistry: Dye-primer ET; % of reads
Chemistry: Dye-terminator Big Dye; % of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 249548 bases at least Q40
Consensus quality: 250157 bases at least Q20
Consensus quality: 250759 bases at least Q20
                                                                                  Insert size: 250000; agarose-fp
Insert size: 251971; sum-of-contigs
Quality coverage: 17.52 in Q20 bases; agarose-fp
Quality coverage: 17.54 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
Submitted (31-OCT-2001) Genome Sequencing Center, 4444 Forest Park
Parkway, St. Louis, MO 63108, USA
On Nov 14, 2001 this sequence version replaced gi:16554425.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (585571)

McPherson, J. D. and Waterston, R. H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC098728 252571 bp DNA linear HTG 14 MUS musculus chromosome UNK clone RP23-3H22, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                              Web site:http://genome.wustl.edu/gsc/index.shtml Contact: submissions@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   McPherson, J.D. and Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The sequence of Mus musculus clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC098728
AC098728.2 GI:16924170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE, 7
                                                                                                                                                                                                                                                                                                                                                                                      Center project name: M_BA0003H22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                house mouse.
NOTE: This is a 'working draft' sequence. It currently consists of 7 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                49437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 252571)
                                                                                                                                                                                                                                                                                                                                                                                                               ------ Project Information -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vector_side:right"
1 45229 c 45295 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment:00236
fragment_chain:5"
161525...186255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment:00460
fragment_chain:5"
151059. .161424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment:04763
fragment_chain:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.3%; Score 21; DB 2; 100.0%; Pred. No. 4.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50941 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            '1908 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 192810;
```

HTG 14-NOV-2001

0

Gaps

0

```
REFERENCE
AUTHORS
                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                            DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                             RESULT 13
DPU22357/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 140043 AGTAGTCTAATTATTATCAGT 140023
                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                              JOURNAL
MEDLINE
                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                     25 AGTAGTCTAATTATTATCAGT 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
Pepling,M.E.
Direct Submission
Submitted (07-MAR-1995) Melissa E. Pepling, Biochemistry and Cell
Biology, SUNY at Stony Brook, 346 Life Sciences Building, Stony
                                                                                                                                                                     Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha: Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 3875)

Pepling,M.E. and Gergen,J.P.
                                                                                                                                                                                                                                                                    Drosophila pseudoobscura.
                                                                                                           96016114
                                                                                                                     Proc. Natl. Acad. Sci.
                                                                                                                                                        Conservation and
                                                                                                                                                                                                                         Eukaryota;
Pterygota;
                                                                                                                                                                                                                                                       Drosophila
                                                                                                                                                                                                                                                                                                                            Drosophila pseudoobscura runt
U22357
                                                                                                                                                                                                                                                                                                          U22357.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
21; Conserv
                                                                         (bases 1 to 3875)
ling, M.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5006
23952
24052
130885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1056
1156
2392
2492
2492
3646
3746
                                                                                                                                                                                                                                                                                                         GI:722344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_name:Contig39"
130985. .252571
/note="assembly_name:Contig40"
. 54784 c 54357 g 69126 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig28" 2492. .3645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_name:Contig38"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3746.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_name:Contig37"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_name:Contig35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /Organism="Mus musculus"
/db_xref="taxon:10090"
/chromosome="UNK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_name:Contig27
                                                                                                                                                                                                                                                      pseudoobscura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="RP23-3H22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cocation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1055: contig of 1055 bp in length
1155: gap of unknown length
2391: contig of 1236 bp in length
2491: gap of unknown length
3645: contig of 1154 bp in length
3745: gap of unknown length
4905: contig of 1160 bp in length
5005: gap of unknown length
23951: contig of 18946 bp in length
23951: contig of 18946 bp in length
130884: contig of 108633 bp in length
130984: gap of unknown length
130984: gap of unknown length
25571: contig of 10683 bp in length
25571: contig of 10683 bp in length
25571: contig of 10683 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .252571
                                                                                                                                   Gergen,J.P.
function of the transcriptional regulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 21;
Pred. No.
                                                                                                                     U.S.A.
                                                                                                                                                                                                                                                                                                                                                   3875 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                   gene,
                                                                                                            (20), 9087-9091 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                              complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 252571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           602 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                          INV 17-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
AC110102
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2075
       RE 1 to 26058)

RS Muzny D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buck, J., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Davis, C., Davy-Carroll, L., Dederich, D.A., Davis, C., Davy-Carroll, D., Dederich, D.A., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Earlhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Gabisi, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R., Harris, C., Harris, K., Hart, M., Havlak, P., Hale, S., Hamilton, K., Homsi, F., Howard, S., Huber, J., Hulky, S., Hume, J., Jackson, L. E., Kally, S., Khan, U., King, J., Kovar, C., Liu, J., Liu, W., Loulseged, H., Lozado, R.J., Lucharge, O., Lieu, C., Liu, J., Liu, W., Loulseged, H., Martin, P., Martin, P., Maheshwari, M., Madua, P., Martin, P., Martin, P., Martin, P., Maheshwari, M., Madua, P., Martin, P., Martin, P., Maheshwari, M., Madua, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Martin, P., Lucier, R., Luna, R., Ma, J., Martin, P., Mar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prim_transcript
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGTTGGCGGTGTTGCTG 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTGTTGGCGGTGTTGCTG 2056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_PHASE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC110102.1 GI:18643397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brook, NY 11794, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26058 bp DI us norvegicus clone CH230-209C7, 18 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1368. .>38
join(1799.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          join(1799. .2549,2841. .3775)
/gene="runt"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="runt"
join/1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Drosophila pseudoobscura"
/db_xref="taxon:7237"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.08; **
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .>3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 20;
Pred. No.
Martin, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 3;
21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA linear
7, *** SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG 10-FEB-2002
IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Massey, E., Mawhiney, E., McLeod, M.P., Meador, M., Mei, G., Metzker, M., Miner, G., Miner, Z., Mitchell, T., Mohabbat, K., Morgan, M., Morris, S., Moser, M., Newtson, J., Newtson, N., Nguyen, N., Nakerson, E., Nwokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Ovledo, R., Pace, A., Payton, B., Peery, J., Perez, L., Peters, L., Pickens, R., Primus, E., Pu, L.L., Quiles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I., Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Svatek, A., Tabor, P., Tamerisa, K., Tamerisa, K., Tansey, J., Taylor, T., Telfrod, B., Thomas, N., Thomas, S., Warto-Moore, S., Warren, R., Washington, C., Wattington, S., Williamson, A., Wleczyk, R., Wooden, S., Worley, K., War, P., Par, T., Tarrilla, S., Marson, M., Marcon, S., Walson, M., Wilson, M., Wilso
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 26058)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wu,C., Wu,Y., Wu,Y.F., Zhou,J., Zorrilla,S., Nelson,D., Weinstock,G. and Gibbs,R.
                                                                                                                                                                                                                                                                                                                                                                                                                  as soon as 10
be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently
consists of 18 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOTE: Estimated insert size may differ from sequence length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chemistry: Dye-terminator Big Dye: 98% of reads Assembly program: Phrap; version 0.990329
Consensus quality: 15687 bases at least Q40
Consensus quality: 17509 bases at least Q30
Consensus quality: 19045 bases at least Q30
Estimated insert size: 16607; sum-of-contigs estimation Quality coverage: 0x in Q20 bases; agarose-fp estimation Quality coverage: 0.1x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center project Information
Center project name: GOGE
Center clone name: CH230-209C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequencing vector: Plasmid; M77789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Web site: http://www.hgsc.bcm.tmc.edu/Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center: Baylor College of Medicine Center code: BCM
                                             7943
8043
9278
9378
10586
10686
11996
11996
13725
                                                                                                                                                                                                                                3201
3301
4503
4603
6079
6179
                                                                                                                                                                                                                                                                                                                                                            1635
1735
                                                                                                                                                                                                                                                                                                                                                                                                                                              it is available
                                                                                                          10585
10685
11995
                                                                                                                                                                                                                                                                                                                1634:
1734:
3200:
3300:
4502:
                                                                                                      gap of
                                                                                                                                               gap o
                                                                                                                                                                                                        gap of
                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                             contig
gap of
                                         gap
                                                                                                                                                                                        conti
                                                                                                                                                                                                                                                                                             gap o
                                                                                                                                                                                                                                                                                                                  unknown
g of 1202
                                                                                                                                                                                                                                                                                                                                                         of 1634 bp in length
unknown length
of 1466 bp in length
  unknown
of 1328
unknown
                                                               unknown
of 1629
                                                                                                                                               unknown
of 1208
                                                                                                                                                                                      unknown
of 1235
                                                                                                                                                                                                                                unknown
of 1764
                                                                                                      of 1310
                                                                                                                              unknown
                                                                                                                                                                                                                                                                           of 1476
                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                              and the
                                                                                  bp in l
length
                                                                                                                                                                                                                                                                                                                  length
bp in l
                       length
bp in l
                                                                                                                                             length
bp in ]
                                                                                                                                                                                                                                                                       length
bp in length
                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                      bp in length
                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                 length
                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                              accession number will
                                                                                                      length
                   length
                                                               length
                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mei, G., Metzker, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
U95370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19180 CAGGATAAAATAAAGCTAAA 19199
                                                                                                                              CDS
                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                229 CAGGATAAAATAAAGCTAAA 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacillus licheniformis.
Bacillus licheniformis
Bacillus/Clostridium group;
Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus/Staphylococcus group; Bacillus.

1 (bases 1 to 28798)

Konz,D., Doekel,S. and Marahiel,M.A.

Molecular and biochemical characterization of the protein template controlling biosynthesis of the lipopeptide lichenysin

J. Bacteriol. 181 (1), 133-140 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   995370 28798 bp DNA linear BCT 14-JAN-Bacillus licheniformis lichenysin biosynthesis openon: lichenysi synthetase B (licA), lichenysin synthatase B (licB), lichenysin synthetase B (licC), and thioesterase (licTE) genes, complete complete complete synthetase C (licC), and thioesterase (licTE)
                                                                                                                                                                                                                                                                                                                                        Germany
                                                                                                                                                                                                                                                                                                                                                                               Submitted (27-MAR-1997) Fachbereich Chemie/Biochemie
                                                                                                                                                                                                                                                                                                                                                                                                   Konz,D., Doekel,S
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U95370.1
                                                                                                                                                                                                                                                                                                                                                            Philipps-Universitaet Marburg, Hans-Meerwein-Str., Marburg 35032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99084949
                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 28798)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15253
16752
16852
18108
18208
19469
19469
21160
21260
21260
21260
22507
23693
23793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:10116"
/clone="CH230-209C7"
5623 c 5111 a ccc
                                                                                                                                                                                                                                                                                                                                                                                                                         Doekel, S. and Marahiel, M.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .26058
                                                                                                                                                                                                            /strain="ATCC 10716"
/db_xref="ATCC:10716"
/db_xref="taxon:1402"
/codon_start=1
/transl_table=11
/product="lichenysin synthetase A"
                                                                                                                              462. .11210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:3080741
                                                                                                      /gene="licA"
                                                                 note="LicA"
                                                                                  'function="antibiotic-biosynthesis"
                                                                                                                                               /gene=
                                                                                                                                                                                    note="lichenysin biosynthesis operon"
                                                                                                                                                                                                                                                                           ∕organism="Bacillus licheniformis'
                                                                                                                                                                                                                                                                                             . .28798
                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation
                                                                                                                                                                       .11210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24967: gap of unknown
26058: contig of 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23692:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19468 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of unknown contig of 1247 gap of unknown contig of 1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of unknown contig of 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown
of 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
of 1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1760 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 26058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCT 14-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lichenysin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

0;

COMMENT

TITLE

```
### ADDITION OF THE PROPERTY O
```

gene

gene

```
/product="lichenysin synthetase b*
//db_rief="Gi: And/d738.1"
//db_rief="Gi
```

```
/transl_table=11
/product="11chenysin synthetase C"
/product="11chenysin synthetase C"
/protein_id="AaD04759.1"
/db_xref="G1:3080744"
/db_xref="G1:3080744"
/translation="MKGDTILSOFKKEHVQDIYYLSPMQEGMLFHTLLHPGQSEYIEQ
/translation="MKGDTILSOFKKEHVQDIYYLSPMQEGMLFHTLLDGWC
ISMQVKGSFQKDILEKSMNVIIGRYDIFRTVFVHEKKKRPVQVVLKERSFQAEEIDLS
GLSEAEDGNERIEDFYKRKDKEKGFNLSKOIPMRTAVFKKQODRYEMVGSYHHILLDGWC
FGIVVQELFEVYNALRENRLYSLGPVKPYKDYIKWLESQDKQRSLAYWEHHLLAGFEGQ
TTFSEGRKKPEQAGNQFDEELLFTLPKEDTEVFTQLAKHTTLSTALQAVWSVLLSRY
QRSRDLIFGTYVSGRPADIQTVEHMVGLFINVPFKRVTFGAHTTFTELVAELQACME
AEPHQYMPLYDIQSHIAAPNLIDHIIVFENYPLQEANKQHEEKNLGFTMDDITVFEKS
NYDLKLLASFQEEMLKKAYNRRVFERSFILDGLKEQLLTAIREIITNPEQPLDDICOV
SKKEKRLHBEFNGQVQRKQTGLTIPGRFEQQAEALFEQPAVSAAGRTLTYRELNEQA
NKVAHLLRKKNVGRGEFVALLFRRSPENVIAILAVLKAGGAYLPIDPEYFEARIQYML
EDSGAVCMLTQEELAGQAASLSFHQNTILIDDPAVSAESGRNLEIAAEPDDDLAYIMYT
```

Query Match 4.1%; Score 20; DB 1; Length 28798; Best Local Similarity 100.0%; Pred. No. 18; Matches 20; Conservative 0; Mismatches 0; Indels 0, Gaps 0;

Search completed: October 27, 2002, 21:48:35 Job time : 1558.38 secs á 밁

THIS PAGE BLANK (USPTO)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ջ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
    836
313.29
29.1
266.5
260.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
259.5
25
                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     greater than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-2
836
1 MNRGCLQGSSLIII:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungl:*
4: sp_human:*
5: sp_nammal:*
6: sp_mammal:*
7: sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, rived by analysis of the total score distribution.
    100.0
37.5
31.9
31.9
31.0
31.0
31.0
31.0
31.0
31.1
29.5
28.4
28.4
28.4
28.4
28.4
28.7
28.7
28.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562222 seqs,
                                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          October 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MNRGCLQGSSLIIISVFLVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_archea:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_invertebrate: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10.0 ,
                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000000000
    /, 2002, 10:56:01; Searc a)
// 2002, 10:56:01 is Searc a)
1540.986 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore
(c) 1993
                                                                                                                                                                                                                                                                                                                                                                          DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172994929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0.5
      16
16
    Q985G4
Q9AGC7
Q92R89
                                                                   09F9K8
054381
09F9Z252
052252
09K2N6
031065
031065
09K4W8
09S4W8
09F0Q1
09F0Q1
09F0Q1
09F0Q1
09F0Q1
09F0Q1
09F0Q1
09F0Q1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ....IYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.1.3
Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           time 18.1865 Seconds
alignments)
Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ltd
09f9k8 pisciricket
054381 rickettsia
09f9f2 rickettsia
052252 rickettsia
052252 rickettsia
09k2n6 male-killin
031065 rickettsia
09k4w8 male-killin
053154 rickettsia
09f9q9 rickettsia
09f9q1 rickettsia
09f9q1 rickettsia
09f0q1 rickettsia
                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                  male-killin
rickettsia
                                                                                                                                                                                                                                                                                                       pisciricket
rickettsia
                                                                                                                                                                                                  male-killin
      3
```

87	87.5	88.5	88.5	89	90	91	92	93.5	94	94.5	95.5	96	86	98	99	99.5	101.5	105.5	106	106.5	107.5	107.5	108.5	110.5	111	112		128.5
10.4	10.5	10.6	•	٠	10.8		11.0	11.2		11.3		11.5		11.7	11.8	11.9	12.1	12.6	12.7		12.9	•			ω ·	ω ·	13.9	15.4
201	407	216	161	137	105	544	105	257	809	838	79	223	220	172	154	83	304	223	155	221	155	153	155	232	139	257	154	182
16	16	16	N	16	16	σ	16	16	10	N	16	16	2	16	16	16	16	N	2	16	N	N	N	16	N	16	16	16
Q930X4	031557	Q98NA9	068681	Q9HU07	Q983Y0	046171	Q98P93	Q9A8M8	Q9SUX1	Q9AL49	Q92NT4	Q9KSR1	Q9XAX8	P76572	Q9CN83	Q92LP2	Q91762	Q9XCA4	Q9RB08	Q92ST9	Q9RA95	069776	Q9F6B1	Q9A3X8	Q52854	Q9PGX0	Q914S1	09нх13
Q930x4 rhizobium m	O31557 bacillus su	Q98na9 rhizobium l	O68681 bacillus me	Q9hu07 pseudomonas	Q983y0 rhizobium l	3	Q98p93 rhizobium l		Q9suxl arabidopsis	Q9al49 shigella fl	Q92nt4 rhizobium m	Q9ksrl vibrio chol	Q9xax8 pseudomonas		Q9cn83 pasteurella		Q9i762 pseudomonas	Q9xca4 porphyromon	.0	9 rhizobiu	Q9ra95 serratia sp	069776 rhizobium e	Q9f6bl edwardsiell	Q9a3x8 caulobacter	Q52854 rhizobium l			Q9hx13 pseudomonas

ALIGNMENTS

```
RESULT
Q9F9K8
                 δÃ
                                      멍
                                                                           dg.
                                                                                                                                                             Вþ
                                                       Qγ
                                                                                                δÃ
                                                                                                                     Query Match
Best Local Similarity
Matches 162; Conserv
                                                                                                                                                                                                                                                                                                     Q9F9K8 PRELIMINARY;
Q9F9K8;
Q1-MAR-2001 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
17 KDA ANTIGEN.
                                                                                                                                                           Kuzyk M.A., Burian J., Thornton J.C., Kay W.W.;
"Identification of a genus-common Rickettslal surface an
salmonid pathogen Piscirickettsia salmonis.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF184152; AAG17000.1;
SEQUENCE 162 AA; 17661 MW; DDE99E6FD94A527E CRC64;
                                                                                                                                                                                                                                                             Piscirickettsia salmonis.
Bacteria; Proteobacteria;
Piscirickettsia.
                                                                                                                                                                                                                                                                                             OSPA
                                                                                                                                                                                                                     STRAIN-LF-89;
                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                    NCBI_TaxID=1238;
                   121
 121
                                                                                                                                                                                                                                                                                                                                                                          _
                                       61
                                                           61
                                                                             ERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                     ERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                     Conservative
                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                 16,
16,
                                                                                                                                                                                                                                                                         gamma
                                                                                                                     0;
                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                              Score 836; DB 2;
Pred. No. 9.6e-68;
                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                         subdivision; Piscirickettsia group;
                                                                                                                                                                                                                                                                                                                                                         162
                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                                                   surface antigen
                                                                                                                     0;
162
                                                                                                                                       Length
                                                                                                                     Indels
                                                                                                                     0;
                                                                                                                                                                                                    Ħ
                                                                                                                     Gaps
                                       120
                                                          120
                                                                              60
                                                                                                                     0
```

RESULT 2 054381

```
Qγ
                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 3
Q9F9F2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                        spotted fever group.";
Int. J. Syst. Evol. Microbiol. 51:339-347(2001).
EMBL; AF195118; AAG28452.1; -
SEQUENCE 159 AA; 16497 MW; 34C58020AF470A1F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ID
ACCOMPAND
ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE=21217364; PubMed=11321078;
                                                                                                                                                                                                                                                                                                                                                                                                                               Bouyer D.H., Stenos J., Crocquet-Valdes P., Moron C.G., Pop
Zavala-Velazquez J.E., Foll L.D., Stothard D.R., Azad A.F.,
                                                                                                                                                                                                                                                                                                                                                           "Rickettsia felis: molecular characterization of a new member of
                                                   9 SSLIIISV---FLVGC--AONESROEVGAATGAVVGGVAGOLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsia felis (Rickettsia azadi).
Bacteria; proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiaeae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
17 KDA GENUS-COMMON ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9F9F2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9F9F2
SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132 KAYGTACRQPDGQWQVV 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDITNE-98087556; PubMed-9425244;

Davis M.J., Ying Z., Brunner B.R., Pantoja A., Ferwerda F.H.;

"Rickettsial relative associated with papaya bunchy top disease.";

"In the control of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77 SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 LNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQEKROQYCREFOQKAMIAGQKQ 141
                                                                                                                                                                                                  l Similarity
61; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-NOV-1998 (TrEMBLrel. 08, Last annotation update)
17 KDA COMMON-ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       054381;
054381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NKÓGSGTLIGGTLGGLVGSQFGGGTGRLAAVGAGALLGAILGNQIGAGNDEODRKLAELT 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57;
                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                     34.8%;
38.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37.5%;
41.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15050 MW;
                                                                                                                                                  ; Score 291; DB 2; 
; Pred. No. 1e-18; 
28; Mismatches 5
                                                                                                                                                                                                                                                        34C5B020AF470A1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 313.5; DB
Pred. No. 9e-21;
29; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A7AFEEFDEOAEEE4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159
                                                                                                                                                                                       DB 2; Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ã.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -KNNTGQYCREYTQTVVVGGKQQ 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; Length 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Popov V.L.,
      64
                                                                                                                4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
```

Дb

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
SEQUENCE FROM N. A.
Schulenburg H.J.G.V.D., Hablg M., Sloggett J.J., Webberley M.K.,
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
"On the evolution of male-killing: Monophyletic origin and horizontal transfer of male-killing Rickettsia (a-Proteobacteria) from two concleopters: Coccinellidae, ", Radalia bipunctata L. and A. decempunctata L. Submitted (APR-2000) to the EMBL, AJ269318; CAB9383.1;
EMBL; AJ269318; CAB9383.1;
EMBL; AJ269517; CAB9383.1;
EMBL; AJ269517; CAB9383.1;
EMBL; AJ269517; CAB9382.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9K2N6
Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122 KOOKAYGNACROPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139 QKQEIYGTACRQPD 152 ::1: || || || || || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wolcoular characterization of a novel spotted fever group rickettsial submitted (CCT-1997) to the EMBL/GenBank/DDBJ databases.

1 AB95267.1; ... SEDITENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80 -IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAG 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23 QNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK--- 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. Billings A.N., Tel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsia cooleyi.
Bacteria; Proteobacteria; alph
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7 RGMNKÓGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEÓDRRLA 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=69410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-1998 (TrEMBLrel.
01-JUN-1998 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
17 KDA ANTIGEN (FIREL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      052252
052252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELTSORALEAAPSGSSTEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTGTVVIGG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120 OERROOYCREFOOKAMIAGOKQEIYGTACROPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | GLIGSKIGOSMDQQDK----IKLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGLWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AVLGGQIGAGNDEQDRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137 AA; 14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel (TrEMBLrel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.9%; Score 266.5;
39.6%; Pred. No. 1.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 1.70
23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .4e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
```

.

```
RESULT
O31065
ID
O31065
   RESULT
Q9K4W8
ID Q9
AC Q9
DT 00
DT 00
                                                                                                                                                                           g
                                                                                                                                                                                                   δð
                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SO
                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
 Q9K4W8;
Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O31065 PRELIMINARY; PRT; 137 AA.
O31065; O9WMO2;
O1-JAN-1998 (TrEMBLrel. 05, Created)
O1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
O1-OCT-2001 (TrEMBLrel. 18, Last annotation update)
17 KDA ANTIGEN (17 KDA PROTEIN) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stenos J., Roux V., Walker D., Raoult D.;
"Rickettsia honei sp. nov., the aetiological
spotted fever in Australia.";
Int. J. Syst. Bacteriol. 48:1399-1404(1998).
EMBL; AF027124; AAB81846.1;
EMBL; AF060706; AAD20231.1;
EMBL; AF060704; AAD20230.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia honei.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Billings A.N., Yu X.-J., Submitted (SEP-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE=99045882; PubMed=9828442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-TT-118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132
                                                                                                                                                                           125
                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                                                             10
                                                                                                                                                                                                                                                                                                                                                                 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26 SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                                                                                                                                                                                               SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                           KAYGNACROPD 135
                                                                                                                                                                                                                                                                          LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERROQYCREFQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                                           NKQCTCTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                               EIYGTACRQPD
                                                                                                                                                                                                                                                  SQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KAYGNACRQPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EIYGTACRQPD 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQTGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144
 (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş.
                                                                                                                                                                                                               152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14167 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14785 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                      31.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31.2%; Score 260.5; DB 2
39.7%; Pred. No. 5.1e-16;
Live 22; Mismatches 48
   15,
15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Teel P.D., Walker D.H.;
the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                    Score 259.5; 1
Pred. No. 5.9e
22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                      22;
Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C8254739CCA56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75BC1D0D745B428C CRC64;
                                                                              144
                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                              ጅ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                      48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agent of Flinders
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 144;
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                      ٥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Island
                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       131
                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
Q53154
                     Š
                                                           Ъ
                                                                                          δÃ
                                                                                                                                    В
                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local s
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE=93084757; P Baird R.W., Lloyd M "Characterization a
                                                                                                                                                                                                                                                                                                                       MEDLINE=93084757; PubMed=1452660;
Baird R.W., Lloyd M., Stenos J., Ross B
"Characterization and comparison of Aus
group rickettsiae.";
J. Clin. Microbiol. 30:2896-2902(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1998 (TrEMBLrel. 08,
(CLONE PRB FISF 1), 5' END C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q53154
Q53154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Coccinellidae).";
Appl. Environ. Microbiol. 67:270-277(2001).
EMBL; AJ269516; CAB96381.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIINE=20575219; PubMed=11133455; Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K., Bertrand D., Hurst G.D.D., Majerus M.E.N.; "Incidence of male-killing Rickettsia spp. (alpha-Proteobacteria) the Ten-Spot Ladybird Beetle Adalia decempunctata L. (Coleoptera:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17 KDA ANTIGEN (FRAGMENT).
male-killing Rickettsia from Adalia decempunctata.
Bacteria; Proteobacteria; alpha subdivision; RicketRickettsiaceae; Rickettsiaeae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=120393;
                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                            NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142
                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                           65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                      5
                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 141
::|| :| | || || || || || :||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KSYGNACROPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
 QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EIYGTACRQPD 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT 76
                                                           AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNSTG
                                                                                                                                                                       SSLITISV----FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                              GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                      SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
52; Conserv
                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                        154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144 AA;
                                                                                                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                        15849 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14801 MW; C825472F16A56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31.0%;
                                                                                                                                                                                                             30.1%; score 252; DB 2; 35.5%; Pred. No. 3.3e-15; tive 29; Mismatches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 259.5; DB 2
Pred. No. 6.3e-16;
2; Mismatches 48
                                                                                                                                                                                                                                                                                        F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                 ROSS B.C., Stewart R.S., of Australian human spot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsiales;
                                                                                                                                                                                                                                                Length 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
```

9;

Gaps 81

2

in

spotted

fever

14;

Gaps

4.

64

Dwyer B.;

밁

125

QD----

-CRVYTQTVVIGGKQQKAYGNACRQPDGQ 154

```
Query Match
Best Local S
Matches 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 P9Q0
AC Q05Q0
AC 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γQ
                                                                                                                                    NON_TER
                                                                                                                                                      STRAIN=CALIFORNIA 2;
Roux V., Raoult D.;
Submitted (DEC-1999) to the
EMBL; AF210693; AAG48554.1;
                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                 Racult D.;
Racult D.;
"A new SFG rickettsia isolated from fleas.";
"A new SFG rickettsia isolated from fleas.";
"A new SFG rickettsia isolated from fleas.";
                                                                                                                                                                                                                                                                                                                                                           01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
17 KDA PROTEIN (FRAGMENT).
Rickettsia sp. California 2.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsiaee; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-CALIFORNIA 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9F0Q1;
Q9F0Q1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 OERROOYCREFQQKAMIAGQKQEIYGTACRQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUDMITTED (AUG-1999) to the EMBL/GenBank/DDBJ databases
NON_TER 151 151
TENTENC 151 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nilsson K., Pahlson C.;
"Novel peptide diagnostic reagent and kit for detection
rickettsiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nilsson K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9F9Q9
Q9F9Q9;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia helvetica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OUTER MEMBRANE PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                           48;
                                 Similarity 37.8
48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RNSTGOYCREYTOTVVIGGKOOKAYGNACROP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GLIGSKIGQSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AVLGGQIVAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                        131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                     28.48; 5c
37.88; Pre
                                                                                                                            131
                                                                                                    13374 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15621 MW; B77407B9C71E4B39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29.5%; Score 247; DB 2
36.2%; Pred. No. 9e-15;
                   Score 237.5; DB 2
Pred. No. 5.4e-14;
22; Mismatches 48
                                                                                                                                                           EMBL/GenBank/DDBJ databases
                                                                                      23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                       48;
                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57;
                                                 Length 131;
                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
               9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
DЪ
                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
```

```
RESULT 12
Q9L522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AD ACCOMPAND ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
Q52637
MEDLINE=21091941; PubMed=11157215;
Simser J.A., Palmer A.T., Munderloh U.G.,
                                                                                                                                                                                                      Q9L522

Q9L522;
Q9L522;
Q9L522;
Q1-CT-2000 (TrEMBLrel. 15, Created)
Q1-CCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                            Rickettsia peacockii.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                       STRAIN-DAE100R;
                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142 EIYGTAC
: || ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 KAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; UC
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Deetle (Adalia bipunctata).",
J. Bacteriol. 176:388-394(1994).
EMBL. U04162; AAA19235.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Majerus M.E.;
"Rickettsial ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE=94117373; PubMed=8288533;
Werren J.H., Hurst G.D., Zhang W., Breeuwer J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 INOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10 NKOGTGTLLGGAGGALLGSOFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsiaee; Rickettsia. NCBL_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1998 (TrEMBLrel. 08, 17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125 KAYGNAC 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREVTQTVVIGGKQQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142 EIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 LNQSLEKVKAGQVTRWRNPDTGNSYSYEPVRTYQRYNKQERRQQYCREEQQKAMIAGOKQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----RNSTGOYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 relative associated with male killing in the ladybird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
13344 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 237.5; DB 2;
Pred. No. 5.4e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AlDCF71050DF52DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
  Kurtti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131
                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stouthamer R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
```

```
δÃ
                                                                                                                                                                             Ъ
                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFT
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                  STRAIN-LA COPITA;
MEDLINE-9837252; PubMed-9701930;
Billings A.N., Yu X.J., Teel P.D., Wal
Billings A.N. et al., Teel P.D., Wal
"Detection of a spotted fever group ri
(Acari: Ixodidae) in south Texas.";
J. Med. Entomol. 35:474-478 (1998).
EMBL; AF033499; AAB86943.1;
         01-OCT-2001 (TrE)
01-OCT-2001 (TrE)
01-OCT-2001 (TrE)
01-OCT-2001 (TrE)
MLR7687 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Appl. En
EMBL; AF
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsiaceae; Rickettsieae; NCBI_TaxID=69475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Rhizobium loti (Mesorhizobium loti)
                                                                 Q985G4;
                                                                             Q985G4
                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             031208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       031208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                    55
                                                                                                                                                                                                    43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          solation of a spotted fever group rickettsia, Rickettsia peacockii, a Rocky Mountain wood tick, Dermacentor andersoni, cell line."; pl. Environ. Microbiol. 67:546-552(2001).

BL; AF260571: AAF69012.1; -.
                                                                                                                                                                              ω
                                                                                                                                                     NPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPD 152
                                                                                                                                                                                                 GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                           GQLVGVGV-----GALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ
                                                                                                                                NPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY - - -
                                                                                                                                                                                                                         1 Similarity 47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 37.8
48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131 AA;
                                                                                                                                                                                                                                                                    105 AA;
                               (TrEMBLrel. 18, (TrEMBLrel. 18, (TrEMBLrel. 18,
                                                                                                                                                                                                                                                                               105
                                                                           PRELIMINARY;
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                              105
; 11236 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
13413 MW;
                                                                                                                                                                                                                                  26.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28.3%;
                                                                                                                                                                                                                         17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22;
                               Created)
Last sequence
Last anno
                                                                                                                                                                                                                        Score 223.5;
Pred. No. 7.4e
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 236.5; DB 2
Pred. No. 6.6e-14;
                                                                            PRT;
                                                                                                                                                                                                                                                                   7BDD35104701D4FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            228C020550CAA9D0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                Walker D.H.;
                                                                                                                                                                                                                                                                                                                                    rickettsia in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105
                                                                            199
                                                                                                                                                                                                                        7.4e-13;
hes 33;
                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -RNSTGQYCREYTQTVVIGGKQQ
                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48;
                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales;
                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                  Amblyomma cajennense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                              Length 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                        17;
                                                                                                                                  103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                              54
                                                                                                                                                                                                   98
                                                                                                                                                                                                                         Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
```

Search co

completed: October ne : 22.1865 secs

27,

2002,

10:59:52

```
δõ
                                                   B
                                                                          Š
                                                                                                                                                           RESULT
Q9AGC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                         NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimot Takeuchi C., Yamada M., Tabata S.;
"Complete genome structure of the nitrogen-fixing symbiotic Mesorhizobium loti.";
                                                                                                                                                                                                           Paspaliaris V., Liedtke B., Vitetta L., Whiting J.L.; "Rickettsia typhus and Rickettsia felis rickettsioses in Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA RES. 7:331-338(2000).
EMBL; AP003012; BAB54098.1; -.
COMPLETE PROTEOMER
SEQUENCE 199 AA; 20517 MW;
                                                                                                                                                                                                                                                                                                                                01-JUN-2001 (TrEMBLrel. 17
01-JUN-2001 (TrEMBLrel. 17
01-JUN-2001 (TrEMBLrel. 17
17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=MAFF303099;
MEDLINE=21082930; PubMed=11214968;
Kaneko T., Nakamura Y., Sato S., A.
                                                                                                                                                                                                EMBL; AF336794; AAK21272.1;
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                         Rickettsia typhi.
Bacteria; Proteobacteria; alpha subdivision;
Rickettslaceae; Rickettsleae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                      Q9AGC7;
                                                                                                                                                                                                                                                                                                                                                                                                     09AGC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Phyllobacteriaceae; Mesorhizobium.
                                                                                                                                                                                                                                                                              NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106 YSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRW
                                                                                                                                                                                                                                                                                                                                                                                                                             15
63
                        99
                                                   .
ω
                                                                            43 GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                        NPDTGNSYSVEPVRT
                                                 GSOFGHGKGOLVGVGVGALLGAVLGGQIGAGMDEQDRRLVELTSQRALESAPSGSNIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GEVVPAQPY-RVGSQD-----CRQYTQTVFTGGAGVTARGTACRNADGSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDTGNS 105
NPDNGNHGYVTPNKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGKVTKSIISAMDGGLIGGSIGNGLSDEEKRSALEAEYKALEYTTSGQKVAWKGDQASHY
                                                                                                      Similarity
29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity 31.8
35; Conservative
                                                                                                                                                                                                                                                                                                                                           1 (TrEMBLrel. 17, 11 (TrEMBLrel. 17, 11 (TrEMBLrel. 17, 17, 17)
                                                                                                                                                         77 AA;
                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                         77
                                                                                                                                                           7955 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.18;
31.88;
                                                                                                                 16.7%;
77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
                                                                                                      13;
                                                                                                                                                                                                                                                                                                                                              Created)
Last sequence update)
Last annotation updat
                                                                                                     Score 140; DB 2; I
Pred. No. 1.6e-05;
3; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 143; DB 16;
Pred. No. 2.9e-05;
5; Mismatches 50;
                                                                                                                                                         B1E447C037263918 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98E6F20A734637AA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                  AA
                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                       Rickettsiales
                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ., Kimura T.,
Matsuno A.,
Sugimoto M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             symbiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sasamoto
                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199;
                                                                                                                                                                                                                           Australia.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bacterium
                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                   62
                                                                             98
                                                                                                      ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
```

THIS PAGE BLANK (USPTO)

•/

90.

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB BG
                                                                                                                                                                                                                                                                                                                   284.5
276
263
261
261
251
258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                              113.5
105.5
105.5
105.5
  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-677-374-2
836
1 MNRGCLQGSSLTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105224 seqs, 38719550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 27, 2002, 10:55:57;
  331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.233
331.23
                                                                                                                                                                                                                                                                                                                                                                                                  35.4
35.2
34.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MNRGCLQGSSLIIISVFLVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000000000
  Gapext 0.5
                                                   KRE2_CANAL
VP5_BTV11
Y615_AQUAE
CANS_BOVIN
NU57_YEAST
SPD1_NEPCL
HEM1_MYCLE
                                                                                                                                                17KD_RICMO
17KD_RICMO
PCP_YEREN
SLYB_ECOLI
SLYB_ECOLI
SLYB_BALTY
PCP_HAEIN
YCFJ_ECOLI
KICJ_BOVIN
XKDD_BACSU
YQBO_BACSU
YKR3_CAEEL
CANS_RABIT
ATPA_BOVIN
ATPA_RAT
                                                                                                                                                                                                                                                                                                                                            17KD_RICPA
17KD_RICRH
                                                                                                                                                                                                                                                                                                                                                                     17KD_RICAU
                                                                                                                                                                                                                                                                                                                                                                                               17KD_RICJA
17KD_RICCN
17KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                         17KD_RICPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ....IYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Search time 5.87565 Seconds (without alignments) 1067.553 Million cell updates/sec
P54334
P57723
P37723
P17873
P17873
P17853
Q921853
Q9218667
Q00310
O668476
O668476
P13135
P198837
P198837
P198837
P198837
P198837
P198837
P198837
                                                                                                                                                                                                                                 P50928
P50927
P50930
P50931
P50929
P20697
P31484
P55741
P55741
P55741
P55741
P55741
P55741
                                                                                                                                                                                                                                                                                                                                                                                  P22882 rickettsia
P50928 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                         P16624 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                             P05372 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                        nephila cia
mycobacteri
caenorhabdi
oryctolagus
                                                                                                                                                                                         bacillus su
bacillus su
salmonella
                                                                                                                                                                                                                                   5 haemophilus
5 escherichia
4 bos taurus
                                                                                                                                                                                                                                                                         4 yersinia en
1 escherichia
9 salmonella
                                                                                          aquifex aeo
bos taurus
                                                                                                                     bluetongue
                                                                                                                                                                                                                                                                                                                                                        rickettsia
                                                                                                                                                                                                                                                                                                                 rickettsia
rickettsia
                                                                                                                                                                                                                                                                                                                                                                       rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                             rickettsia
                                                                                  saccharomyc
                                                                                                                                      candida alb
                                                                                                                                                   rattus
                                                                                                                                                              salmonella
                                                                                                                                                                              escherichia
                                                                                                                                                                                                                                                                                                                                            rickettsia
                                                                                                                                                norv
                                                                    RESULT 1
17KD_RICPR
              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17KD_RICPR
P16624;
01-AUG-1990
                                                                               SIGNAL
CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM
STRAIN=MADRID
                                                                    SEQUENCE
                                                                                                                                        PROSITE;
               61;
                                                              20
20
159
```

Result

ŏ

45	44	43	42	41	40	39	38	37	36	35	34
76.5	77	77	77	77	77	77.5	78	78.5	78.5	79	79.5
9.2	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.4	9.4	9.4	9.5
243	514	506	429	393	269	219	865	553	553	593	553
<u> </u>	_	_	_	<u> </u>	1-4	۳	- →	-	1	1	1
CYSH_ECOLI	ATPA_THIFE	ATPA_ANASP	CSP_PLAMA	CSP_PLABR	CANS_MOUSE	YIAD_ECOLI	VGLB_HSVMD	ATPA_MOUSE	ATPO_BOVIN	K1CJ_HUMAN	ATPA_HUMAN
P17854 escherichia	P41167 thiobacillu	P12405 anabaena sp	P13815 plasmodium	P14593 plasmodium	O88456 mus musculu	P37665 escherichia	P18538 marek's dis	Q03265 mus musculu	P19483 bos taurus		P25705 homo sapien

ALIGNMENTS

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=99039499; PubMed=9823893;
Andersson S.G.E., Zomorodipour A., Andersson J.O.,
Sicheritz-Ponten T., Alsmark U.C.M., Podowski R.M., Naeslund A.R
Eriksson A.-S., Winkler H.H., Kurland C.G.;
"The genome sequence of Rickettsia prowazekii and the origin of
mitochondria.";
Nature 396:133-140(1998).

-i- SUBCELLULAR LOCATION: Attached to the outer membrane by a li
                                                                                                                                                                                                                                                    EMBL; M28482; AAA26378.1; ALT_SEQ.
EMBL; AJ235273; CAA15258.1;
PIR; D33971; D33971.
                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene.";
J. Bacteriol. 171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
STRAIN-MADRID E;
MEDLINE-89359171; PubMed-2768201;
Anderson B.E., Tzianabos T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-AUG-1990 (Rel. 15, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                     Outer membrane; Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17 kDa surface antigen precursor.
OMP OR RP833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsia prowazekii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Comparative sequence analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             anchor (Probable).
                                                                                                                                                                                                                            PS00013; PROKAR_LIPOPROTEIN;
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E; A
                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                              159 1
20 N
16672 MW;
                          35.4%; Score 296; 38.1%; Pred. No. 9.
                                                                                                 17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
; A33D404B65EEB071 CRC64;
                                                                                                                                                                                                     Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159
                                                                                                                                                                          1.
Signal; Complete proteome
                          .9e-1
                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                 Length 159;
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Naeslund A.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  by a lipid
  14;
Gaps
4.
```

Вb γQ Ъ

γQ DЬ Ş

```
RESULT 3
17KD_RICCN
17KD_RICCN
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT Z
17KD_RICJA
ID 17KD_RICJA
Q52764;
Q52764;
Y-NOV-199
                                                                                                                                                               120 RNSTGÓYCREYTÓTVVÍGGKOOKAYGNÁCRQEDGOWOVVN 159
                                                                                                                                                                                       65 AVLGGOIGAGMDEODRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation modified and this statement is not removed. There are no restrictions on its entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                               64 GLIGSKIGOSNDOODK----IKLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYORVNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; D16515; BAA03965.1; PROSITE; PS00013; PROKAR_LI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-5529950; PubMed=7714214; Furnya Y., Katayama T., Yoshida Y., Katho I.; Specific amplification of Rickettsia japonica DNA from clinical Specimens by PCR.";
J. Clin. Microbiol. 33:487-489(1995).
-i. SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                          9 SSLIIISV---FLVGC--AONFSROEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1997 (Rel. 3
01-NOV-1997 (Rel. 3
01-NOV-1997 (Rel. 3
                                                                                                                                                                                                                                                                                        SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGTGQLVGVGVGALLG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-YH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID=35790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia japonica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                     Membrane; Lipoproteii; Antigen; Signal.

L 1 19 BY SIMILARITY.

20 159 17 KDA SURFACE ANTIGEN.

20 20 0 N-ACYL DIGLYCERIDE (PROBABLE).

SNCE 159 AA; 16554 MW; CDDCE7CEBBCCB6B41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kDa surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RNSAGQYCREYTOTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----- 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GLIGSKIGOSHDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SKIMIIALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SSLIISV---FLVGG--AQNFSROEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROKAR_LIPOPROTEIN, 1
                                                                                                                                                                                                                                                                                                                                                                                                          35.2%;
38.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35, Created)
35, Last sequence up
35, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                              30;
                                                                                                                                                                                                                                                                                                                                                               Pred. No.
30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor
                                                                                                                                                                                                                                                                                                                                                                                                      Score 294; I
                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                         159
                                                                                     AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on update)
                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
.5e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ΑA
                                                                                                                                                                                                                                                                                                                                                                                                        Length 159;
                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                              Outer membrane; I
SIGNAL 1
CHAIN 20
LIPID 20
CONFLICT 146
CONFLICT 146
                                                                                                                                  PIR: A25972; A25972

PIR: A31836; A31836

PIR: A33971; A33971.

PIR: B33971; B33971.

PROSITE: PS00013; PROV
                                                                                                                                                                                                     EMBL; M28479; AAA26379.1; --
EMBL; M28480; AAA26376.1; --
EMBL; AE008675; AAL03825.1; --
EMBL; M16886; AAA26381.1; --
EMBL; J03371; --
EMBL; M03371; --
EMBL; M
                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboratio between the Swiss Institute of Bioinformatics and the EMBL outstation use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commercial or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                              modification",
J. Bacteriol, 170:4493-4500(1988).
-1- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDINE-89008059; PhbMed-3139629;
Anderson B.E., Baumstark B.R., Bellini W.J.;
"Expression of the gene encoding the 17-kilodalton antigen Rickettsia rickettsii: transcription and posttranslational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-30 FROM N.A. SPECIES=R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Sequence analysis of the 17-kilodalton-antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-87222152; PubMed=3108232;
Anderson B.E., Regnery R.L., Carlone G.M., Tzianabos T.,
Fu Z.Y., Bellini W.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPECIES=R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Mechanisms of evolution in Rickettsia conorii and R. prowazekii.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.

SPECIES-R. CONOTII; STRAIN-Malish 7;

MEDLINB-21442074; PubMed=11557893;

Ogata H., Audic S., Renesto-Audiffren p., Fournier P.-E., Barbe V.,

Ranoult D., Roux V., Cossart P., Weissenbach J., Claverie J.-M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
SPECIES-R. conorii, and R.rickettsii;
MEDLINE-89359171; PubMed=2768201;
Anderson B.E., Tzianabos T.;
"Comparative Sequence analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteriol. 169:2385-2390(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; alpl
Rickettsiaceae; Rickettsieae;
NCBI_TaxID=781, 783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P05372;
01-NOV-1988 (Rel. 09, Created)
01-AUG-1990 (Rel. 15, Last sequence update)
17 kDa surface antigen precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia conorii, and Rickettsia rickettsii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteriol. 171:5199-5201(1989).
                                                                                                             Lipoprotein;
                                                                                                                       PROKAR_LIPOPROTEIN;
                                 159
20
146
153
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
N -> D (IN REF. 3)
G -> E (IN REF 3)
                                                                               DPROTEIN; 1.
Antigen; Signal; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from Rickettsia
```

McDade J.E.,

a collaboration MRL outstation -

Ъ γQ В Qy Дb δÃ

J

`\

```
TRESULT

ITAL

ITA
                                                                                   ş
                                                                                                                       В
                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                 ş
                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             So
                                                                                                                                                                                                 Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17KD_RICTY STANDARD; PRT; 1
P22882;
01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last sequence up
01-OCT-1996 (Rel. 34, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M28481; AAA26377.1; PIR; C33971; C33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=89359171; PubMed=2768201;
Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of a gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00013; PROKAR_LIPOPROTEIN;
Outer membrane; Lipoprotein; Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia typhi
                                                                                                                                                                                                                                                                                            CIPID
                  142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120 QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS
                                                     87
                                                                                                                         27
                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65 AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriol. 171:5199-5201(1989). - SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 SSLIIISV---FLYGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anchor (Probable).
                                                                                                                                                       SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
               EIYGTACROPDGRWQVIS 159
                                                                                                                         NKQGTGTLLGGAGGALLGSQFGHGKGQLVGVGVGALLGAVLGGQIGASLDEQDRKLLELT
                                                     SQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                       LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61;
= = = :: :: :: ::
                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                               20
159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                         Α
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α
                                                                                                                                                                                                                                                                                                                              Lipoprotein;
19
                                                                                                                                                                                                                                                                         16549 MW;
                                                                                                                                                                                                                  34.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16581 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29;
                                                                                                                                                                                               25;
                                                                                                                                                                                                                                                                       17 KDA SURFACE ANTIGEN N-ACYL DIGLYCERIDE (PRO), 08973E2648FD8CD8 CRC)
                                                                                                                                                                                             Score 284.5; DB 1
Pred. No. 9.5e-18;
5; Mismatches 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 1.8
9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                             1.
Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
.8e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ā
                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 159
                                                                                                                                                                                                                                                                         (PROBABLE)
CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane
                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                 Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
                                                                                                                                                                                                 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                             Gaps
                                                                                                                           86
                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                    17KD_RICAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                            P50927;
01-OCT-1996;
01-OCT-1996;
01-OCT-1996;
17 kDa surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIPID
                                                 NCBI_TaxID=33989;
                                                                                                        Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiaceae;
NCBI_TaxID=787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1996
                                                                                                                                                                                                                                 L7KD_RICAM
                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142 TTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                       6
                                                                                                                                          kDa
                                                                                                                                                                                                                                                                                                                                                                                                5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RICAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
20
```

```
RC OCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

Baird R.W., ROSS B., Dwyer B.;

Submitted (OCT-1991) to the EMBL/GenBank/DDBJ databases.

-!- SUBCELLULAR LOCATION: Attached to the outer membrane
SEQUENCE FROM N.A. STRAIN=MO 85-1084;
                                                                             Bacteria; Proteobacteria;
Rickettsiaceae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia australis.
                                                                                                                                                                                                                                                                                                                                                  124 ----GQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                         QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSLIIISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                              AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTYRNSN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SKIMITALAASMLQACNSPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M74042; AAA26394.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     surface antigen precursor (Fragment)
                                                                                                                                                      surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PS00013; PROKAR_LIPOPROTEIN; 1
                                                                                                                 amblyommii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation update)
                                                                                                                                                                      (Rel. 34, Last sequence update) (Rel. 34, Last annotation update)
                                                                                                                                                                                                               (Rel. 34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                     STANDARD;
                                                                           Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       >154
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33.0%;
                                                                                                                                                    precursor
                                                                         alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Antigen; Signal.
BY SIMILARITY.
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 276;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E3AA833346FAC320 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                      (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        154
                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; I
1.9e-17;
nes 55;
                                                                                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                     A
                                                                                               Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
```

```
RESULT
17KD-RT
17KD-RT
17CD-RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Outer membrane; SIGNAL 1
CHAIN 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-1996 (Rel. 34, Cr
01-OCT-1996 (Rel. 34, La
01-OCT-1996 (Rel. 34, La
17 kDa surface antigen p
                                                                                                      EMBL;
                                                                                                                                                                                                                                                                       STRAIN-MACULATUM;

Pretzman C.I., Stothard D.R., Ralph D., Clark J.B., Fuerst P.A.;

Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.

-!- SUBCELLUIAR LOCATION: Attached to the outer membrane by a 11
                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiaceae; Rickettsieae; NCBI_TaxID=35792;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QMP
P
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsia parkeri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RICPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P50930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7KD_RICPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIPID
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a detween the Swiss Institute of Bioinformatics and the EMBL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C.; Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                 U17008; AAA82040.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AVLGGQVGAGMDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEFVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SKIMITALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                          PS00013; PROKAR_LIPOPROTEIN;
nbrane; Lipoprotein; Antigen;
1 19
BY SIMILA
20 >154 17 KDA St
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U11013; AAB07704.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS00013; PROKAR_LIPOPROTEIN; 1.

#mbrane; Lipoprotein; Antigen; Signal.
1 19 BY SIMILARITY.
20 >154 17 KDA SURFACE ANTIGEN
20 20 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                            Proteobacteria; alpha subdivision; aceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation update)
ace antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
20
20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 >154
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15879 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 263; DB 1; Lengua L.
Pred. No. 6.4e-16;
Vismatches 57; Indels
                  ROTEIN; 1.
ntigen; Signal.
Y SIMILARITY.
7 KDA SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E4FBE4C29D943581 CRC64;
                                                                                                                                                                                                                                                                             the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
              밁
                                           Qγ
                                                                              В
                                                                                                              Qγ
                                                                                                                                                 В
                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                          RESULT 8
17KD_RICRH
                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                        CHAIN
LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                          Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                               PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OMP
                                                                              65
                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P50931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17KD_RICRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIPID
NON_TER
                                                                                                                                                 ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56;
```

```
the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-1996 (Rel
01-OCT-1996 (Rel
17 kDa surface (
                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
120 QERRQOYCREFQQKAMIAGQKQEIYGTACRQPDGR 154
                                                                                                                                                                                                                                                                                                                                                                   EMBL; Ull020; AAB07706.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretz Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; alpha subdivision; Rickettsiales.
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=33992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsia rhipicephali.
                                                      GLIGSKIGOSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                    SSLIIISY---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 GLIGSKIGOSMDQQDK-----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                           AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY-----
                                                                                            SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGR 154
                                                                                                                                                                              56; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SSLIIISV----FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIMVIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                  PS00013; PROKAR LIPOPROTEIN; 1.
mbrane; Lipoprotein; Antigen; Signal
1 19 BY SIMILARITY.
20 >154 17 KDA SURFACE ANTIGEN.
20 20 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                              20 >
20
154
154 AA;
                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antigen precursor (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                              >154
20
154
                                                                                                                                                                                       31.2%;
36.1%;
                                                                                                                                                                                                                                            15895 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20 N
154
15897 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.2%;
                                                                                                                                                              Score 261; DB 1; Lu.
Pred. No. 9.5e-16;
                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 261; DB 1; Le
Pred. No. 9.5e-16;
                                                                                                                                                                                                                                     OCF85AD5D96DFEFB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-ACYL DIGLYCERIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5D06F45F9DBD5EEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P.A., Pretzman C.;
                                                                                                                                                                                                    Length 154;
                                                                                                                                                                                                                                                                      (PROBABLE).
                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by a lipid
                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                       for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                       .ch/announce/
                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                             63
                                                                                                62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                        its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
```

154

٦,

```
RESULT 9

17 KD_RACMO
1D 17 KD_RACMO
1D 17 C11-OCT
DT 011-OCT
DT 011-OCT
DT 01-OCT
DA RICKET
OC This S
CC 
       RRR OCC OCC DTT DAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
17KD_RICCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                               17KD_RICCA
P29697;
01-APR-1993
01-APR-1993
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 154 AA. P50929; PRT; 154 AA. Ol-OCT-1996 (Rel. 34, Created) 01-OCT-1996 (Rel. 34, Last sequence update) 01-OCT-1996 (Rel. 34, Last annotation update) 17 kDa surface antiden prepures (Fig. 1996) 17 kDa surface antiden prepures (Fig. 1997) 18 kDa surface antiden prepures (Fig. 1997) 19 kDa surface (Fig. 1997) 19 kDa sur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00013; PROKAR_LIPO
Outer membrane; Lipoprotein;
SIGNAL 1 19
                                                                                                      Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
NCBI_TaxID=788;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-OHIO 83-441;
Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pres
Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases
SEQUENCE FROM N.A. MEDLINE-92108069;
                                                                                                                                                                                                                   Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia montana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .7KD_RICMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sities requires a license agreement (See http://www.isb-sib.ch/announce/send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U11017; AAB07705.1; -
                                                                                                                                                                                                                                                                                               surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                       canada.
                                                                                                                                                                                                                                                                                                                         (Rel. 25, Created)
(Rel. 25, Last sequence update)
(Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
20
                                                                                                                                                                                                                                                                                           antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                >154
   PubMed=1729713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15881 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30.9%;
                                                                                                                                                                                                                                                                                       (Fragment).
                                                                                                                                           alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POPROTEIN; 1.
; Antigen; Signal.
BY SIMILARITY.
17 KDA SUMFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 258; DB 1; Pred. No. 1.7e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A09C53B8769E31DA CRC64;
                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                     Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pretzman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
```

```
RESULT 11
PCP_YEREN
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQ PTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 31
                                                                                                                                                                                                                                                                                                                                                                 01-JUL-1993
01-JUL-1993
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                    PCP_YEREN
P31484;
                               the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; 1Fnv.; PRUn....

PROSITE; PS00013; PRUn....

Thrane; Lipoprotein;
                      or send an email to license@isb-sib.ch).
                                                                                               This
                                                                                                                                                                                    "A lipoprotein of Yersinia uptake in Escherichia coli.
J. Bacteriol. 174:1029-1039
                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-ATCC 51872 / WA-C / SEROTYPE
MEDLINE-92121089; PubMed=1732192;
Baeumler A.J., Hantke K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content modified and this statement is not removed. Usage by ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                       NCBI_TaxID=630;
                                                                                                                                                                                                                                                                                                                                                    Outer membrane lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               typhus-like rickettsia found in cat fleas."; Proc. Natl. Acad. Sci. U.S.A. 89:43-46(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Azad A.F., Sacci J.B. Jr. Schmidtmann E.T., Carl M.
                                                                                   between
                                                                                                                                                             -!- SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                             Yersinia enterocolitica.
                                                                                                                                                                                                                                                                                                                                          PCP OR PCPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; M82879; -;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Genetic characterization and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                       Bacteriol. 174:1029-1035(1992) FUNCTION: FACILITATES FERRIOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L
                                                                                                                                    anchor.
SIMILARITY:
                                                                                                                        H. INFLUENZAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       anchor (Probable).
                                                                               SWISS-PROT entry is copyright. It is produced through 
een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSQFGKGKGQLIGVGAGALLGAILGNQIGAGMDEQDRRLAELTSQRALETTPSGTSIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NPDNGNYGYVTPSKTYK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NPDTGNSYSVEPVRTYQ
X60448; CAA42977.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
31; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               iPR000437; Prok_lipoprot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80 AA;
                                                                                                                                                                                                                                                                                                                                                                 (Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                     TO
                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                       PCP.
                                                                                                                                                                                                                                                                                                                                                                . 26, Created)
26, Last sequ
. 37, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37; Prok_lipoprot.
PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
8372 MW;
                                                                                                                                    E.COLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .B. Jr.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       115
                                                                                                                                     AND S.TYPHIMURIUM
                                                                                                                                                                         FERRIOXAMINE UPTAKE
                                                                                                                                                             Attached to the
                                                                                                                                                                                                                                                                                                                gamma
                                                                                                                                                                                                     enterocolitica
                                                                                                                                                                                                                                                                                                                                                    pcp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15;
                                                                                                                                                                                                                                                                                                                                                                 sequence update)
annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nelson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 157; DB 1
Pred. No. 4e-07;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AD289A48EAB19E0E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transovarial transmission
                                                                                                                                                                                                                                                                                                                                                    precursor
                                                                                                                                                                                                                                                                                                                 subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W.M., Dasch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                   0:8;
                                                                                                                                                                                                                                                                                                                                                                                                                 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no restrictions
                                                                    There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                             outer membrane
                                                                                                                                                                                                               facilitates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲.
                                                                                                                                     SLYB
                                                                                                                                                                                                                                                                                                                 Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                     ö
                                                                                                                                                                                                               ferrioxamine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of
                                                                                                                                                             уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   by a lipid
                                                                                               Ø
                                                                                                                                                             ø
                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                              collaboration
                                  ch/announce/
                                                                                   outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in no way
                                               commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.
```

4;

```
A Alba H. Baba T. Fujita K., Hayashi K., Inada T., Isono K.,
A Itoh T., Kasai H., Kashimoto K., Kimura S., Kitakawa M.,
A Kitagawa M., Makino K., Miki T., Mizobuchi K., Mori H., Mori T.,
A Oshima T. Saito N., Sampei G., Seki Y., Sivasundaram S.,
RA Tagami H., Takeda J., Takemoto K., Takeuchi Y.,
RA Yamamoto Y., Horiuchi T.,
RA Yamamoto Y., Horiuchi T.,
RT To-kb DNA sequence of the Escherichia coli K-12 genome
RL DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
SLYB_EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Д
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

STRAIN-KI2 / MG1655;

MEDLINE-97426617; PubMed-9278503;

Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V. Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Mau B., Shao Y.;

"mho Shao Y.; Kirkpatrick H.A., Goeden M.A., Rose D.J., "mho Shao Y.; "mho Shao Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                             EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DR KW FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE=96133688; PubMed=8544813;
Ludwig A., Tengel C., Bauer S., Bubert A.,
Goebel W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           haemolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P55741; P76183.

Ol-NOV-1997 (Rel. 35, Created)
Ol-NOV-1997 (Rel. 35, Last sequence update)
Outer membrane lipoprotein slyB precursor.
SLYB OR B1641 OR Z2655 OR ECS2350.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=562, 83334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia coli, and Escherichia coli 0157:H7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLYB_ECOLI
                                                                                                                                                                                                                                                                                        Complete genome sequence of Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     127 VOKOGPTRESVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; S23787, S23787.
HSSP; P00778; 1104.
PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Signal,
SIGNAL 1, 1
POTENTIAL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83 --NOSLEKVKAGQVTRWRNPDTGNSYSVEP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ω</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10 SLIIISVFLVGCAQN-----FSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regulatory protein from Salmonella typhimurium, induces
ytic and pore-forming protein in Escherichia coli.";
en. Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLGGELGNTVGGGTGRSLATAAGAVAGGMAGOGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AVAÍAAVTLTGCÁNNNTLSGDVÉŚÁSQAKQVQTVTYGTLLSVRPVTIQGGDDNNVNGÁIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18 155 OU
18 18 N-
155 AA; 15362 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OUTER MEMBRANE LIPOPROTEIN PCP.
N-ACYL DIGLYCERIDE (POTENTIAL).
BAD6BE2132E849FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 113.5; DB 1;
Pred. No. 0.0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Benz R., Mollenkopf H.-J.,
                                                                                                                            AM.,
1 H., Mori T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----VGAAT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51;
                                                                                                                                                                                                                                                                                                                                                                             <u>۷</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

```
RESULT 13
SLYB_SALTY
ID SLYB_SALTY
ID 5154_SALTY
ID 053549;
C 053549;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Outer membrane lipoprotein slyB precursor
                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DR FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ECOGÉNE; EG13409; SLYB.

PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.

Outer membrane; Lipoprotein; Signal; Compl.

CHAIN

I 17

CHAIN

I 18

LIPID

CONFLICT

98

98

SEQUENCE 155 AA; 15602 MW; 543EB8A4069
                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                98 RNPDTGNSYSVEPVRTYQRYNKQER 122
                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                     10 MVGLSĽVGCVNNDTLSGDVYTASEÁKQVQNVSYGTIVNVRÞVQIQGGDDSNVIĠÁIGĠÁV 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AB000259; AAC74713.1; EWBL; D90807; BAAL5402.1; EMBL; AB005387; AAG56630.1; EMBL; AP002558; BAB35773.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBI outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch/).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13 IISVELVGCAQN-----FSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-21156231; PubMed=11258796;
Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoyal Hayashi T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yobe T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunag Complete genome sequence of enterohemorrhagic Escherichia coli DNA Res. 8:11-22(2001).

11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2001-11-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                    ---DDGNTIMVVQKQGNTRFSPGQR 140
                                                                                                                                                                                                                                                                                                                       LGGFLGNTVGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK---
                                                                                                                                                                                                                                                                                                                                                         VGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRW 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-21074935; PubMed=11206551;
Perra N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grobaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Wather F.R.;
Welch R.A., Blattner F.R.;
"Genome sequence of enterohaemorrhagic Escherichia coli 0157:H7.", Nature 409:529-533(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-0157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=0157:H7 / E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anchor (Potential).
SIMILARITY: TO S.TYPHIMURIUM SLYB, H.INFLUENZAE PCP AND
Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 105.5; DI
Pred. No. 0.02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-ACYL DIGLYCERIDE
A -> T (IN REF. 2)
543EB8A4069A5FA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OUTER MEMBRANE LIPOPROTEIN SLYB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Ishii K., Yokoyama K.,
Tanaka M., Tobe T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
```

```
SOTTTT WERE ADDRESS OF THE STREET ADDRESS OF
  밁
                                     Š
                                                                                                                               Query
Best L
                                                                                                         Matches
                                                                                                                                                          EMBL; AL627271; CNACL EMBL; AL627271; CNACL EMBL; AL627271; CNACL EMBL; AL627271; CNACL EMBL; AL627271; S1yB.

StyGene; SG1557; S1yB.

PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.

OUTER MEMBRANE LIPOPROTEIN
CHAIN
18 155 OUTER MEMBRANE LIPOPROTEIN
CHAIN
18 158 N-ACYL DIGLYCERIDE.
18 18 N-ACYL DIGLYCERIDE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWI
between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M. Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-96133688; PubMed-8544813;
Ludwig A., Tengel C., Bauer S. B. Goebel W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Whitehead S., Barrell B.G.; "Complete genome sequence of a multiple enterica serovar Typhi CT18."; Nature 413:848-852(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreill Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layr Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLYB OR STM1445 OR STY1
Salmonella typhimurium,
Salmonella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES-S. typhi; STRAIN-CT18; MEDLINE-21534947; PubMed-11677608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 413:852-856(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPECIES-S.typhimurium; STRAIN-LT2
MEDLINE-21534948; PubMed-11677609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MO1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        haemolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria;
     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               send
                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          semiss-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way if ited and this statement is not removed. Usage by and for commercial ities requires a license agreement (See http://www.isb-sib.ch/announce/send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: TO E.COLI SLYB, H. INFLUENZAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anchor (Potential)
                                              GCLQGSSL----
GCVNNDSLSGDVYTASEAKQVQNVTYGTIVNVRPVQIQGGDDSNVIGAIGGAVLGGFLGN
                                                                                                                                                                                                                                                                                                                                                                                        AE008762; AAL20367.1; -. AL627271; CAD01922.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                               S80790; AAB35871.2; -.
                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regulatory protein from Salmonella typhimurium, induces ic and pore-forming protein in Escherichia coli."; Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N. A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OR STY1677.
imurium, and
                                                                                                                               12.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gamma
                                                                                                    19;
                                                                                                                            Score 105.5;
Pred. No. 0.
                                              ---IIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQ
                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bubert A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / SGSC1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                drug
                                                                                                                            .02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outer
                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Benz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCP
                                                                                                    52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  resistant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enterobacteriaceae;
                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                       Length
                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              700720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mollenkopf H.-J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Y.ENTEROCOLITICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Latreille
                                                                                                                                                                                                                                                              SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    by a
                                                                                                    ω
ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Layman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wain J.
Lhia M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D.,
                                                                                                 ω
```

LIPID CONFLICT SEQUENCE

155

A

15425

MΣ

CRC64;

REF.

CHAIN

OUTER MEMBRANE LIPOPROTEIN
N-ACYL DIGLYCERIDE.
CSLVAEFVF -> VAGRRVRI (IN

LIPOPROTEIN

Outer membrane; SIGNAL 1

PS00013; PROKAR_LIPOPROTEIN; mbrane; Lipoprotein; Signal; (

Complete

proteome

EMBL; U32832; AAC232 PIR; B28543; B28543.

M18877;

AAA24938.1; AAC23228.1;

use by non-profit institutions as modified and this statement is not rementities requires a license agreement

institutions as long

is not removed. Usage by and for agreement (See http://www.isb-sib

as its content

for

in no way commercial

or send

an email to license@isb-sib.ch).

```
RESULT 14

ID POP_HABIN

ID POP_HABIN

ID POP_HABIN

AC 01032

DT 01-NO

DT 16-OC

DE Cross

GN PCP O

OC Haemo

OC STRA:

RA Weidi

RA Oneh

RA Gneh

RA GNEL

RA GNEL

RA GNEL

RA GNEL

RA GNEL

RA GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Outer membrane lipoprotein PCP precursor (15 kDa Cross reacting lipoprotein). PCP or LPP OR HI1579. Haemophilus inf
                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness I Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick (McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weldman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D. Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R. Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-88115138; PubMed-2828309; Deich R.A., Metcalf B.J., Finn C.W., Farley J.E., Green B.A.; Deich R.A., Metcalf B.J., Finn C.W., Farley J.E., Green B.A.; "Cloning of genes encoding a 15,000-dalton peptidoglycan-associated outer membrane lipoprotein and an antigenically related 15,000-dalto protein from Haemophilus influenzae."; "J. Bacteriol. 170:489-498(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCP_HAE
P10325;
                                                                                                                                                                                                                                                                                                                                                                                                               the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Haemophilus influenzae.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Whole-genome random sequencing
influenzae Rd.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=RD / KW20 / ATCC 51907;
MEDLINE=95350630; PubMed=7542800;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE-88115138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: TO E.COLI
Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HAEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                     SWISS-PROT entry is copyright. It is producen the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIMVVQKQGNTRFSAGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TIGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       269:496-512(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .COLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S.TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                       It is produced through a collaboration informatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          assembly of Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                               There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lipoprotein) (PAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                               restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15,000-dalton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - - DDGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
∡ ™
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 104
                                                                                                                                                                                                                                                                                                                                                                                                               on
```

Query Match
Best Local Similarity

Matches

Conservative

Score 102; DB 1; Length 155; Pred. No. 0.04; 1; Length 155; 9; Mismatches 23; Indels

Gaps

0;

12.2%;

DЬ δÃ

```
RC STRAIN=K12;

RX MEDLINE=97061202; PubMed=8905232;

RA OShima T., Alba H., Baba T., Fujita K., Hayashi K., Honjo A.,

RA Ikemoto K., Inada T., Itoh T., Kajihara M., Kanai K., Kashimoto K.,

RA Kimura S., Kitagawa M., Makino R., Masuda S., Miki T., Mizobuchi K.,

RA Mori H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Salto N.,

RA Sampei G., Seki Y., Tagami H., Takemoto K., Wada C., Yamamoto Y.,

RA 718 kb DNA sequence of the Escherichia coli K-12 genome

Corresponding to the 12,7-28.0 min region on the linkage map.";
              EMBL;
                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation use by non-profit institute. There are no restrictions on its entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@iib-sib.ch).
                                                                                                                                                                                                                 MEDLINE-1236546; PubMed=6265208;
Young J.G., Rogers B.L., Campbell H.D., Jaworowski A., Shaw D.C.;
"Nucleotide sequence coding for the respiratory NADH dehydrogenase of Eur. J. Biochem. 116:165-170(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

STRAIN=K12 / MG1655;

MEDLINE-97426617; PubMed=9278503;

Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-vides J., Glasner J.D., Rode C.K., Mayhew G.F., Mau B., Shao Y.;

"The Complete genome sequence of Escherichia coli K-12.";

[2]
 AE000211; AAC74194.1; -. D90746; BAA35925.1; -. V00306; -; NOT_ANNOTATED_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _ECOLI
YCFJ_ECOLI
YCFJ_ECOLI
937796; P75951; STANDARD; PRT; 179 AA.
01-OCT_1994 (Rel. 30, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Escherichia coli.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hypothetical protein ycfJ. YCFJ OR B1110.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOT_ANNOTATED_CDS
```

Jol	C SY SY SY Db
tro	SQ SQ SQ SV SQ SV SQ
	a ta
e c	ECHY TREST
du.	Poo ANN ANN ANN ANN ANN ANN ANN ANN ANN A
8. 8.	en. thu SMI SMI ENC altc val val
tec 375	e; et; et; M NE S S S S 26 ATC
65	EC Eca
a လ လ	112 1 117 117 1118 CCC CCC
Search completed: October Job time: 8.87565 secs	444 Pro 5 5 9 1 11 11 3VJ
9 6	4; ote ote ote er er er er
N)	EcoGene; EG12444; ycfJ. Hypothetical protein; T. TRANSMEN 25 SEQUENCE 179 AA; 189: TY Match 11. t Local Similarity 27. Thes 26; Conservative 31 GAATGAVVGGVAGOLFGKG, :
7,	118 118 118 118 118 118 118 118 118 118
Ň	Tr. 92(
00;	ans ans 18; 8; 8; 8;
Search completed: October 27, 2002, 10:56:29 Job time: 8.87565 secs	DR ECOGENE; EG12444; ycfJ. Hypothetical protein; Transmembrane; Complete Proteome. O SEQUENCE 179 AA; 18920 MW; BASEBODB56D45609 CRC64; Best Local Similarity 27.1%; Pred. No. 0.082; Matches 26; Conservative 12; Mismatches 32; Indels 1; IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
10	POP POP POP POP POP POP POP POP POP POP
5	rai TEN BAS SAS SAS Mi Mi Mi Mi Mi
	PER STREET
9	ROGGE ROGGE
	B5(B5(C. She YA(
	ple 5D4 5D4 08 08 11:
	ete 156 156 2) 2) 2) 10
	09 09 32; 32;
	ro MD fer C
	tex RCG In DQJ
	ome ome ode:
	17: [K]
	, 6
	26 SL:
	ekv.
	, Ga
	EcoGene; EG12444; ycfJ. Hypothetical protein; Transmembrane; Complete proteome. SEQUENCE 179 AA; 18920 MW; BA5EBOB56D45609 CRC64; Y Match Local Similarity 27.1%; Pred. No. 0.082; Local Similarity 27.1%; Pred. No. 0.082; Shes 26; Conservative 12; Mismatches 32; Indels 26; Gaps 1: Indels 26; Gaps 2: Indels 26; Gaps 3: Indels 3:
	~

Copyright (c) 1993 - 2002 Compugen Ltd

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen param
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
      Pred. No. is the number of results predecore greater than or equal to the scoand is derived by analysis of the total
                                                                                                                   296
293
293
294
293
284
284
284
284
284
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-2
836
1 MNRGCLQGSSLIII:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               October 27, 2002, 10:56:01; Search time 10.6321 Seconds (without alignments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283138 seqs, 96089334 residu
   335.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
355.00
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MNRGCLQGSSLIIISVFLVG.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length DB
D33971
B33971
A33971
A33971
A239760
C397860
C39787
A25972
D83169
A83514
B83514
S22787
AD2696
D97478
S58237
AD2696
D97478
AF0289
AF0386644
AF04855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
```

45	44	43	42	41	40	39	38	37	36	35	34	S S	32	31	30
89	89.5	89.5	89.5	90	90	92	92	93.5	94	94	94	96	98	98	98
10.6	10.7	10.7	10.7	10.8	10.8	11.0	11.0	11.2	11.2	11.2	11.2	11.5	11.7	11.7	11.7
137	691	220	220	1332	526	100	100	257	809	278	278	223	179	172	172
2	N	N	ν	N	_	Ν	ν	N	N	N	N	2	N	2	N
в82998	F91251	AI2910	G97685	F69732	KRBOVI	AE2897	G97672	F87413	T05442	н98195	AB3091	C82230	AC0198	D85894	н65026
hypothetical prote	probable tape meas	porin [imported]	probable outer mem	PBSX prophage ORF	keratin, 54K type	conserved hypothet	hypothetical prote	hypothetical prote		hypothetical prote	hypothetical prote	probable lipoprote	probable exported	probable outer mem	hypothetical prote

ycfJ protein - Esc	ross-react ble secret membrane hetical pr	mem mem mem lip	lipA protein - Ahi hypothetical prote probable lipoprote outer membrane lip	outer membrane lip conserved hypothet lipA protein [impo	: ∹:	rickettsial common Rickettsial common Rickettsial common 17K surface antige Rickettsial Common	Description	edicted by chance to have a ore of the result being printed, al score distribution.		meters: 283138	ues	IYGTACRQPDGRWQVISTEK 162	(without alignments) 1464.098 Million cell updates/sec
RESULT 2 B33971	Qy 120 Db 120	Qy 64 Db 65	Qу 9 Въ 5	Query Match Best Local Matches 6	A;Gene: comp; RP833 C;Superfamily: rickettsial C;Keywords: surface antigen	A; Molecule type: DNA A; Residues: 1-159 <an2> A; Cross-references: GB:AJ235273; A; Experimental source: strain Ma</an2>	A;Title: The genome A;Reference number: A;Accession: B71645	A; MOLECULE type: DNA A; Residues: 1-159 <and> A; Residues: GB: A; Cross-references: GB: A; Note: the sequence in A; Note: SG.E; ZO</and>	D33971 D33971 N;Alternate names: 17kD surface C;Species: Rickettsia prowazekii C;Date: 16-Mar-1990 #sequence_re C;Accession: D33971, B71645 R;Anderson, B.E.: Tzianabos, T. J. Bacteriol. 171, 5199-5201, 19 A;Title: Comparative sequence an A;Reference number: A33971; MUJD A;Accession: D33971 A;Status: preliminary			41 42 43 44 45	38 40
				y Match Local Similarity hes 61; Conser	omp; RP833 amily: ric ds: surfac	le type: le type: le type: le type: reference mental s	The ger	Le type: es: 1-15 referenc the sequeson, S.G	ial commate names: Rickes: Rickes: D3. l6-Mar-1 lion: D3. lon: D.7 riol: 17 Compara compara compara nce numb			90 89.5 89.5 89.8	92 90
	YCREFQQ : YCREYTQ	SKIGQSMDQQDK : : : 3QIGASMDEQDR	ISVF	nilarity Conse	33 icketts ace ant	ype: DNA 1-159 <an2> rences: GB: al source:</an2>	140, 1998 nome sequer ner: A71630	രെജ	on anti s: 17kD ettsia p 990 #se 1971; B7 1, Ti199 1, 5199 1, 15199 1, 15199 1, 15199			10.8 10.7 10.7 10.7	11.0 11.0 10.8
	KAMIAGO : : TVIIGGK	QDK : QDRRLLE	VGC AQ I QACNGQS	Va.	ial com igen	AJ23527 strain	, 1998 sequence o A71630; MU	M28482; GenBan	gen pre surfac rowazek guence_ 1645 1655, T abos, T 1-5201, 1-5201, MU			1332 220 220 220 691 137	100 100 526
	QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS 159:	GLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRVNK 119	SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63 :: :	precursor - Rich face antigen; on zekii czekii czekii czekii czekii czekii 1989 of a zekii 1989 of a zekii 200 o z		ALIGNMENTS	2 F69732 2 G97685 2 F912910 2 F91251 2 B82998	2 G97672 2 AE2897 1 KRBOVI					
	w w	SNSYSVEPVRTYORYNK 119 	LFGKGSGRVAMAIGGAVLG 63 : :: FeQGKGQLVGVGVGALLG 64	Length 159; Indels 14; Gaps 4;		n not snown 61237; PIDN:CAA15258.1; PID:g386	prowazekii and the origin of mitochondria.	ease 109.0, (PID:g152462) omits .; Sicheritz-Ponten, T.; Alsmark	wazekii ne protein (omp); RP833 ext_change 03•Nov•2000 non rickettsial antigen gene.			PBSX prophage Orr probable outer mem porin [imported] - probable tape meas hypothetical prote	hypothetical prote conserved hypothet keratin, 54K type

```
RESULT 3
A 33971
Rickettsial common antigen precursor - Ricke C; Species: Rickettsia rickettsii
C; Dete: 16-Mar-1990 #sequence_revision 16-Ma C; Accession: A33971
R; Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A; Title: Comparative sequence analysis of a A; Reference number: A33971; MUID:89359171
A; Recession: A33971
A; Status: preliminary
A; Molecule +une. num
A; Molecule +une. num
17K surface antigen precursor [imported] - Rickettsia conorii (strain Malist C;Species: Rickettsia conorii (Strain Malist C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C;Accession: G97860 *R:Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Schence 293, 2093-2098, 2001
                                                                                                                                           G97860
                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-159 <AND>
A; Cross-references: GB:M28480; NID:g152457;
C; Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:M28479; NID:g152463; PIDN:AAA26379.1; C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C:Species: Rickettsia conorii
c:Date: 16.Mar-1990 #sequence_revision 16-Mar-1990 #text_change 20-Aug-1999
C:Accession: B33971
                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A:Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a
A;Reference number: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Anderson, B.E.
J. Bacteriol, 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                               120 RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                              120 QERROQYCREFQOKAMIAGQKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                  65
                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQYIS 159
                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                             AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                             GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG 64
                                                                                                                                                                                                                                                                                                                                                               SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                      61;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               35.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35.0%;
38.1%;
                                                                                                                                                                                                                                                                                                                                                                                                               29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29;
                                                                                                                                                                                                                                                                                                                                                                                                       Score 293; DB 2; 1
Pred. No. 1.2e-18;
9; Mismatches 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 293; DB 2; Le
Pred. No. 1.2e-18;
Niematches 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia rickettsii
                                                                                                     Rickettsia conorii (strain Malish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIDN:AAA26376.1; PID:g152458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 159,
                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rickettsial antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PID: g152464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                  Samson,
                                                                                                       7)
                                                                                                                                                                                                                                                                                                                                                                                                  4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                  D.,
                                  RC
```

```
R;Anderson, B.E.; Regnery, R.L.; Carlone, G.M.; Tzianabos, T.; McDade, J.E.; J. Bacteriol. 169, 2385-2390, 1987
A;Title: Sequence analysis of the 17-kilodalton-antigen gene from Rickettsia A;Reference number: A25972; MUID:87222152
A;Accession: A25972
                                                                                         C;Species: Rickettsia rickettsii
C;Date: 21-May-1988 #sequence_revision 21-May-1988 #text_change
                                                                                                                                                      RESULT
A25972
                                                                                                                            17K antigen precursor - Rickettsia rickettsii
                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA A;Residues: 1-159 <AND>
A;Residues: 1-159 <AND>
A;Cross-references: GB:M28481; NID:g152459; PIDN:AAA26377.1; PID:g152460 C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Bacteriol. 171, 5199-5201, 1989
A.Title: Comparative Sequence analysis of A.Reference number: A33971; MUID:89359171
A:Accession: C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsial common antigen precursor - Rickettsia C;Species: Rickettsia typhi C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 C;Accession: C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: omp
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A:Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia A:Reference number: A97700; MUID:21442074; PMID:11557893
                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references: GB:AE006914; PIDN:AAL03825.1; C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-159 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                  142
                                                                                                                                                                                                                                      142 EIYGTACROPDGRWQVIS
                                                                                                                                                                                                                                                                                                        82
                                                                                                                                                                                                                                                                                                                     27 NKQCTGTLLGGAGGALLGSQFGHGKGQLVGVGVGALLGAVLGGQIGASLDEQDRKLLELT
                                                                                                                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                         TTYGNACROPDGQWQVVN 159
                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                SQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                  SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIMIIALATSMLOACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  preliminary
                                                                                                                                                                                                                                                                                                                                                                                              55;
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                     34.0%;
39.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35.0%;
38.1%;
                                                                                                                                                                                                                                                                                                                                                                                           25;
                                                                                                                                                                                                                                                                                                                                                                                    Score 284.5;
Pred. No. 7e-1
25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 293;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-Mar-1990 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ໝ
                                                                                                                                                                                                                                                                                                                                                                                                     7e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genus-common
                                                                                                                                                                                                                                                            -RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
.2e-18;
                                                                                                                                                                                                                                                                                                                                                                                      49;
                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:915620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                159;
                                                                                         20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                prowazekii
                             ricketts
                                                          Fu,
                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                          Z.Y.
```

```
RESULT 8
A13418
17K surface antigen precursor [imported] - Brucella melitensis (strain 16M)
C.Species: Brucella melitensis
C;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 01-Feb-2002
C;Ccession: A13418
R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova,
C;Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; Letess
Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella melitens
A;Reference number: AD3252; PMID:11756688
A;Accession: A13418
A;Accession: A13418
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Geneti
A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conserved hypothetical protein PA3819 [imported] - Pseudomonas aeruginosa (; Species: Pseudomonas aeruginosa C; Species: Pseudomonas aeruginosa C; Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000 C; Accession: D83169 R; Stover; C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hich adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Lari, Lory, S.; Olson, M.V.
Nature 406, 959-664, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Residues: 1-159 <AND>
A;Cross-references: GB:M16486; NID:g152467; PIDN:AAA26381.1; PID:g152468
C;Superfamily: rickettsial common antigen
A; Molecule type: DNA
A; Residues: 1-131 <KUR>
A; Cross-references: GB:AE008917; PIDN:AAL52516.1;
A; Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
D83169
                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:AE004799; GA:Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-182 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: A; Accession: D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Complete genome sequence of Pseudomonas aeruginosa
A;Reference number: A82950; MUID:20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PA3819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RNSTGQYCREYTQTVVIGGKQQKAYGDACRQPDEQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLIGSKIGOSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                                                                              STVHDSSEKVVGYDVKYMLDGKAGQIRMERDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -KLNQSLEKV------KAGQVTRWRNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QIAGTAIGAVVGGLLGNQIGGGTGKKIATVAGAVGGGYAGNKVQEGMQERDTYTTTETRC 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15.4%; Score 128.5; DB 2;
34.8%; Pred. No. 0.0004;
34.8%; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Score 284; DB 2; 1; Pred. No. 7.7e-18; 29; Mismatches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GB:AE004091; NID:g9949981; PIDN:AAG07206.1; GSPDB:GN00:
                                                                                                                                                                                                                                                                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                       PID:g17983328; GSPDB:GN00190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PA01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               opportunistic patho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hickey,
Larbig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M.J.; Br
K.; Lim,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PA01)
```

```
RESULT 9
B83514
                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Accession: B83514
R;Stover, C.K.; Pham, X.Q.;
adman, S.; Yuan, Y.; Brody,
                                                                                                                         Dр
                                                                                                                                                                                                                                                A;Gene: PA1053
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                A;Molecule type: DNA
A;Residues: 1-154 <STO>
A;Cross-references: GB:AEO04537; GB:AE004091; NID:g9946960; PIDN:AAG04442.1;
                                                                                                                                                                                                                                                                                                                                                              A;Title: Complete genome sequence of Pseudomonas aeruginosa A;Reference number: A82950; MUID:20437337 A;Accession: B83514 A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       conserved hypothetical protein PA1053 [imported] - Pseudomonas aeruginosa (strain C;Species: Pseudomonas aeruginosa C;Species: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
밁
                           Qy
                                                            망
                                                                                       δÃ
                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                    A; Experimental source: strain PAO1 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: BMEI1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                          Matches
                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               position:
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153
                               83
                                                            61
                                                                                            30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   47 GKGSGRVAMAIGG------AVLG-GLIGSKIGQ--SMDQQDKIKLN-QSLEKVKAG 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72 KSVLWSGAGS-NAGDVTAAQPYQ-----VGSQNCRQYSHSFTIGGDQQTVRGTACRNPD 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 GKGSG--FPSLGGSSQKPETNLLASLGNGLFGNSASQLSAADRRKALEAEYRALEYSPAG 71
                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                           ш
                                                                                        VGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPD 152
STRAYVQQVDQGQIFR 136
                               --NQSLEKVKAGQVTR
                                                                                                                        {\tt MRKSALIVASFTAMALALGGCQSSLTGDTYSREEARTVQTVRMGTIQALRPVKIEGTKTP}
                                                                                                                                                         MNRGCLQGSSLIIISVFLVGC----AQNFSRQE-----
                                                            IGSIAGAGVGGVAGSAVGGGKGSYVAAIIGAVAGGLLGAATEEGLTRTQGVEITVREDDG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
39; Conserv
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                       13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15.0%;
                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.;
                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                       Score 116;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 125.5; DB 2
Pred. No. 0.00052;
                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                      2;
                                                                                                                                                                                          41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                    Length 154;
                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                              PAO1,
                                                                                                                                                                                        40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23;
                                                                                                                                                                                                                                                                                                                                                                                                              an
                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              opportunistic
                                                                                                                         60
                                                                                            82
                                                                                                                                                          29
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hickey,
Larbig,
                                                                                                                                                                                                                                                                                                                   GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                        Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Χ.<u>ч</u>
```

pa

٠. تا

outer membrane lipoprotein precursor - versinia en c;Species: versinia enterocolitica C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 C;Accession: S23787 R;Baeumler, A.J.; Hantke, K. J. Bacteriol. 174, 1029-1035, 1992 J. Bacteriol. 174, 1029-1035, 1992 A;Reference number: S23786; MUID:92121089 A;Accession: S23787

Yersinia enterocolitica

10-Nov-1995

#text_change

29-Sep-1999

facilitates

ferrioxamine uptake

in

10

A; Status: preliminary

A;Residues: 1-155 <BAE> A;Cross-references: EMBL:X60448; NID:g48577; PIDN:CAA42977.1; PID:g48579 C;Superfamily: PAL cross-reacting lipoprotein

В

Matches

Local Similarity es 37; Conserv

Conservative

13.6%; Score 113.5; DB 24.7%; Pred. No. 0.007;

DB 2;

155;

Mismatches

Indels Length

51; Gaps

4

```
A:Status: preliminary
A:Status: preliminary
A:Molecule type: DNA
A:Molecule type: DNA
A:Molecule type: DNA
A:Cross: references: GB:AE003872; GB:AE003849; NID:g9104975; PIDN:AAF82991.1; GSPDB:GN001
Briones, M.R.S.; Bueno, M.R.P.C.; AIruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.; ASA; Aluthors: Ferreira, A.J.G.; Prenco, A.; Carrer, H.; Facincani, A.P.; Ferreira, A.J.S.
A:Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frohm Chado, M.A.; Madeira, M.B.N.; Madeira, M.P.; Krieger, J.E.; Kuramae, E.E.; Laigra, F.; Nuramae, L.R.; Oliveira, A.M.; Madeira, H.M.F.; Marino, C.L.; Margues, M.V.; Martins, F. F.; Nuramae, M.C.; de Oliveira, R.C.; Miyaki, C.Y.; A.; Buthors: da Silva, A., C.R.; da Silva, F.R.; da Silva, A.M.; Silva, R.V.; Savasay, A.C.; de Oliveira, R.C.; Dalmieri, D.; A.; Buthors: da Silva, A.F.; M.S.; Santelli, R.V.; Savasay, A.C.; de Oliveira, R.C.; Palmieri, D.; A.; Carrer, M.C.; de Oliveira, R.C.; Palmieri, D.; A.; Carrer, M.C.; de Oliveira, R.V.; Savasay, A.C.; de Oliveira, R.C.; Palmieri, D.; A.; Carrer, M.C.; de Oliveira, R.C.; Carrer, M.C.; de Oliveira, R.C.; de Oliveira, R.C.; de Oliveir
lipA protein [imported] - Agrobacterium tumefaciens (strain C58, Dupont)
C.Species: Agrobacterium tumefaciens
C.Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 11-Jan-2002
C.Accession: AB2596
C.Accession: AB2596
C.Accession: Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I.; Karp, P.; Romero, P.; Zhang, S. Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClelj
                                                                                                                                                                                                                                                                                                                                        RESULT 12
AD2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rianonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Sequent A;Title: The Genome sequence of the plant pathogen Xylella fastidiosa.

A;Note: for a complete list of authors see reference number A59328 below
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             conserved hypothetical protein XF0178 [imported] - Xylella fastidiosa (Strain 9a5c)
                                                                                                                                                                                                                                                                                                                                                                                  105 GTAIGALIGGLYGNQFGHGNGRKALTAAGAVAGGFIGNEV 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QV
                                                                                                                                                                                                                                                                                                                                                                                                                                         31 GAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKI 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 127 VQKQGPTRFSVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83 --NOSLEKVKAGOVTRWRNPDTGNSYSVEP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67 GAVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGQGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10 SLITISVELVGCAON-----FSRQE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AVAÍAAVTÍTÖCÁNNNTLSGDVÉSASQAKQVQTVTYGTILSVRPVTIOGGDDNNVMGÁIG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 112; DB 2; Length 257;
Pred. NO. 0.016;
8; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
```

```
RESULT 14
S58234
                                                                                                                                                                                                                                                            A:Map position: circular chromosome
                                                                                                                                                                                                                                                                          A;Crossrreferences: GB:AE007869; PIDN:AAK86781.1; PID:915155981; GSPDB:GN00169
                                                                                                                                                                                                                                                                                                                             A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-125 <KUR>
                                                                                                                                                                                                                                                                                                                                                                  A;Reference number: A97359;
A;Accession: D97478
                                                                                                                                                                                                                                                                                                                                                                              R;Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.;
                                                                                                                                                                                                                                                                                                                                                                                                                           lipA protein [imported] - Agrobacterium tumefaciens (strain C58, Cereon) C.Species: Agrobacterium tumefaciens (strain C58, Cereon) C.Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 11-Jan-2002
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                             Fitle: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium (Reference number: A97359; PMID:11743194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                            111 GAACRNDDGSW 121
                                                                       145 GTACRQPDGRW 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: DNA
A;Residues: 1-142 <KUB>
A;Cross-references: GB:AED08688; PIDN:AAL41986.1; PID:g17739358; GSPDB:GN00186
                                                                  60 LETAPVGTPVIWTGDDVKGOVVANAP---YOVGN-----ONCROYSHTLTVDGRDTRVR 110
                                                                                               86 LEKVKAGQVTRWRNPDT-GNSYSVEPVRTYORYNKOERROOYCREFQOKAMIAGOKOEIY 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58
A;Reference number: AB2577; PMID:11743193
A;Accession: AD2696
                                                                                                                                                   30 VGAATGAVVGGVAGQLFGKGSGRVANAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQS 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science 294, 2317-2323, A; Authors: Yoo, H.; Tao, ster, E.W.
                                                                                                                           2 LSACTTTGTRPAGGSLEGR-SAQPSTPFLANLOGGIVG-KSGVELDRGDOTKALEAEYKA
                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108 QNCRQYSHTLTVDGRDTRVRGAACRNDDGSW 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125 QYCREFQOKAMIAGQKQEIYGTACRQPDGRW 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 IGOSMDOQDKIKL----NQSLEKVKAGQVTRWRNPDT-GNSYSVEPVRTYQRYNKQERRQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12 SILCVSM-LSAC-----TTTGTRPAG--GSLFGR-SAQPSTPFLANLQGGIVG-K 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10 SLIIISVELVGCAQNESRQEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSK 69
                                                                                                                                                                                                                      1 Similarity
36; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGVELDRODOTKALEAEYKALETAÞVGTÞVIWTGDDVKGQVVANAÞ---YÖVGN-----
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 27.2
41; Conservative
                                                                                                                                                                                             13.3%; Score 111; DB 2; I
27.5%; Pred. No. 0.0093;
tive 18; Mismatches 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13.3%; Sur.
27.2%; Pre/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        , 2001
o, Y.; Hiddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 111.5; DB 2;
Pred. No. 0.0096;
21; Mismatches 60;
                                                                                                                                                                                                                   Length 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 142;
                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9,
```

lipA protein – Rhizobium leguminosarum C;Species: Rhizobium leguminosarum

В Qy Ъ Qy Дb Qy

```
RESULT 15
(887629
hypothetical protein CC3073 [imported] - Caulobacter crescentus
C:Species: Caulobacter crescentus
C:Species: Caulobacter crescentus
C:Accession: 687629
R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J.
B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Koloc
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M.
Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
A;Accession: C87629
                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                 밁
Search completed: October 27, 2002, 10:58:39 Job time: 12.6321 secs
                                                                                                                                                               å
                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-232 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 08-Oct-1999 C;Accession: S58234 R;Yeoman, K.H.; Delgado, M.J.; Downie, J.A.; Johnston, A.W.B. submitted to the EMBL Data Library, July 1995 A;Reference number: S58232 A;Accession: S58234
                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene: CC3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-139 <YEO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:AE005673; NID:g13424723; PIDN:AAK25035.1; GSPDB:GN00148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X89983; NID:g929821; PIDN:CAA62010.1; PID:g929824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match 13.2%; Score 110.5; DB 2; Best Local Similarity 26.9%; Pred No. 0.02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125 QYCREFQQKAMIAGQKQEIYGTACRQPDGRW 155
                                                                                                                                                                                                                         141 AAQEVGGIYKSGGFRYAQTVQAAPLVKIEKKMVTR----STVNL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106 QNCRQYTHTLTVDGKDTVARGAACRNDDGSW 136
                                                                                                                                                                                                                                                                                                                                 81 VVGCKASGKKQEVGAVVGALLGAAAGSNLAKNDQGTGTAIGAVVGAGAGSLIGCKMQKSD 140
                                                                                                                                                                                                                                                                                                                                                              18 LVGCAQNFSRQEYGAATGAVVGGVAGQLFGK---GSGRVAMAIGGAVLGGLIGSKIGQSM 74 :||| : :|| || || || || || : :|
                                                                                                                                                                                                                                                                          75 DQQDKIKLNQS------LEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70 IGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPD-TGNSYSVEPVRTYQRYNKQERRQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 SALLLAVALSGCTTTKSASR-------GIFSSKPSASAAFIT--ALQGGIVG-R 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10 SLITISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSK 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match 13.3%; Score 111; DB 2; Length 139; Local Similarity 25.2%; Pred. No. 0.01; es 38; Conservative 18; Mismatches 65; Indels 30;
                                                                                                        RAAASTRGERLGAVDSGTTFQALG---RTKDGKWILVGQD 217
                                                                                                                                                                  RRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGVSLTDSDKQRALEAEYRALEGAAVGQPVLWTGKDVTGKVVAAAPYQV------GS 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                  43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                               56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 232;
                                                                                                                                                                                                                                                                                                                                                                                                                                               39;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
```

THIS PAGE BLANK (USPTO)

ş

Run on:

```
Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                      81.5
81.5
81.5
81.5
81.5
77.5
                                                                                                                              76.5
76.5
76.5
76.7
76.7
76.7
74.5
74.5
74.5
                      73
73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /cgn2_6/ptodata/1,
3: /cgn2_6/ptodata/1,
4: /cgn2_6/ptodata/1,
5: /cgn2_6/ptodata/1,
6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-677-374-2
836
1 MNRGCLQGSSLIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       October 27, 2002, 10:56:01; Search time 8.39378 Seconds (without alignments) 471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        231628 seqs, 24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum Match 0%
Maximum Match 100%
Listing first 45 su
     MNRGCLQGSSLIIISVFLVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
20000000000
                                       GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
US-08-556-978B-19
US-09-247-806-1
US-08-425-069-2
US-08-317-844B-2
US-09-347-177-3
US-09-367-351-2
US-09-367-497-2
US-08-375-790-2
US-08-375-790-2
US-08-440-519-12
US-08-440-519-12
US-08-440-519-12
US-08-440-519-65
US-08-220-151-6
US-08-220-151-6
US-08-375-799-7
US-08-375-799-7
US-09-375-799-7
US-09-067-351-1
US-09-360-440-700-2
US-08-556-823-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .....IYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                     Sequence
   Sequence
Sequence
19, Appli 2, Appli 3, Appli 3, Appli 3, Appli 2, Appli 2, Appli 2, Appli 2, Appli 3, Appli 3, Appli 3, Appli 3, Appli 4, Appli 4, Appli 4, Appli 5, Appli 6, Appli 6,
                    δÃ
                    28
   QEVGAATGAVVG----
```

Result

ð

Minimum Maximum

Database

Sequence 26 Sequence 35 Sequence 35 Sequence 35 Sequence 35 Sequence 36 Sequence 20 Sequence 20 Sequence 20 Sequence 20 Sequence 55 Sequence 67 Sequence 75 Sequence 75 Sequence 75 Sequence 20 Sequence 21	Ouery Match 9.7%; Score 81.5; DB 4; Lengti Best Local Similarity 36.8%; Pred. No. 0.8; Matches 25; Conservative 3; Mismatches 17; Inde.	S-08-556-978B-19 Sequence 19, Application US/08556978B Sequence 19, Application US/08556978B Sequence 19, Application US/08556978B Sequence 19, Application US/0856978B Sequence 19, Application US/0856978B Sequence 19, Application US/0856978B Sequence 10	ALIGNMENTS	28 73 8.7 254 4 US-09-128-450-26 29 73 8.7 254 4 US-09-823-494-26 30 73 8.7 606 4 US-09-823-494-26 31 72.5 8.7 606 4 US-09-177-349-3 32 72.5 8.7 547 1 US-08-340-203A-3 33 72.5 8.7 547 2 US-08-452-567-3 34 72.5 8.7 547 2 US-08-452-427-3 35 72.5 8.7 547 2 US-08-452-427-3 36 72.5 8.7 731 2 US-08-911-364-1 37 72.5 8.7 731 2 US-08-511-364-1 37 72.5 8.7 792 2 US-08-678-039A-40 38 72 8.6 101 4 US-08-556-978B-20 40 72 8.6 101 4 US-08-556-978B-22 41 72 8.6 101 4 US-08-556-978B-62 42 72 8.6 101 4 US-09-247-806-5 43 72 8.6 101 4 US-09-247-806-5 43 72 8.6 101 4 US-09-247-806-5 44 72 8.6 101 4 US-09-247-806-5 45 72 8.6 606 4 US-08-556-978B-63
6 G 2007 5 5 200 6 20 6 20 6 20 6 20 6 20 6 20 6	h 651; ls 23			Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq
	sq			200 200 200 200 200 200 200 200 200 200

-GVAGQ----

-------LFGKGSGRVAMAIGGAVLGG

64

US-09-247-806-1

GENERAL

INFORMATION:

Sequence 1, Application US/09247806 Patent No. 6280747

Q

65 LIGSKIGQ 72

551 LGGQGAGQ 558

22

```
APPLICANT: PHILLIPPE, Michel
APPLICANT: GARSON, Jean-Claude
PITLE OF INVENTION: Jean-Pierre
TITLE OF INVENTION: COSMETIC OR DERMATOLOGICAL COMPOSITION CONTACTING AT
FILE REFERENCE: 6388-0365-0
CURRENT APPLICATION NUMBER: US/09/247,806
CURRENT APPLICATION NUMBER: EF 98/01614
EARLIER APPLICATION NUMBER: EF 98/01614
SOFTWARE: PATE: 1998-02-11
EARLIER FILING DATE: 1998-02-11
SOFTWARE: Patentin Ver. 2.1
LENGTH: 651
TYPE: PRT
OPGRANTCM. NACH: 12 01-11-11
                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                    APPLICANT: Lewis, Randolph V.
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: Yu, Ming
APPLICANT: Yu, Ming
APPLICANT: Hinman, Michael B.
ITITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
CORRESPONDENCE ADDRESS:
ANDORGERS. BITCH FORMAL FORMAL AND PRODUCTS THEREOF
ANDORGERS. BITCH FORMAL FORMAL FORMAL AND PRODUCTS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491 QGAGAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28 OEVGAATGAVVG-----GVAGQ------LFGKGSGRVAMAIGGAVLGG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 81.5; DB 4;
Pred. No. 0.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ς,
                    Query Match
                                                                                                                                            INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-317-844B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08317844B
Patent No. 5989894
                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 14
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: MUTPHY JT., Gerald M
REGISTRATION NUMBER: 28,977
                                                                                                                                                     TELEFAX: (/ TELEFAX: 248345
                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Rel
                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 9.7%;
Best Local Similarity 36.8%;
Matches 25; Conservative
                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Xu, Ming
APPLICANT: Hinman, Michael B.
TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: PROTEIN, A REPLICABLE VECTOR AND A TRANSFORMED CELL
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: 1
APPLICANT: 1
APPLICANT: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 04-OCT CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U. 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 301 No. 591
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         551 LGGQGAGQ.558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              491 ÓGAGAAAAAVGAGQEGIRÓQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 28,977
TELECOMUNICATION INFORMATION: 1447-106P
TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8000
TELEFAX: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65 LIGSKIGO 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 QEVGAATGAVVG----GVAGQ------LFGKGSGRVAMAIGGAVLGG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Murphy Jr., Gerald REGISTRATION NUMBER: 28,9
                                                                    TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
CANT: Lewis, Randolph V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Virginia
                                                                                                                                                                            (703) 241-2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Birch, Stewart, Kolasch & Birch
11 No. 5989894th Washington Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                 04-OCT-1994
         9.78;
                                                                                                                                                                                                                                                                                                                          US/08/317,844B
                                                                                                                                                                                                                                                                                                                                                            Release #1.0,
                                                                                                                                                                                                                          1447-105P
     Score 81.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 81.5; DB
Pred. No. 0.91;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                      Version #1.25
   DB
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 23; Gaps
```

RESULT 3 US-08-425-069-2

Sequence 2, Application US/08425069 Patent No. 5728810

GENERAL INFORMATION:

ATTORNEY/AGENT INFORMATION:

Length 718;

APPLICATION NUMBER: US/08 FILING DATE: 19-APR-1995

US/08/425,069

ANDMESSEE: Birch, Stewart, Kolasch & Birch STREET: 301 No. 5728810th Washington Street CITY: Falls Church STATE: Virginia COUNTRY: U.S.A.
ZIP: 20,6.S.A.

22046

В

551 LGGQGAGQ 558

65 LIGSKIGO 72

Дb

; ORGANISM: Nephila clavipes US-09-247-806-1

Best Local Similarity 36.8 Matches 25; Conservative

9.7**8**; 36.8**8**;

Mismatches

Query Match

```
8
 B
                                                        B
                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                      US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/09034177 Patent No. 6127146
                                                                                                                Matches
                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Lal, Preeti
APPLICANT: Guegler, Karl J.
APPLICANT: COrley, Neil C.
TITLE OF INVENTION: HUMAN F
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: GI 1174414
                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS: LENGTH: 747 amino acids
                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 31, CITY: Palo Alto
551 LGGQGAGQ 558
                                                      491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                            65 LIGSKIGQ 72
                                                                                                                                                                                                                             TOPOLOGY: 11
                                                                                    28 QEVGAATGAVVG----GVAGQ-----
                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE: HEREW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 LIGSKIGQ 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 QEVGAATGAVVG----GVAGQ-----
                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                               LING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGGQGAGQ 558
                                                                                                                25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94304
                                                                                                                           Similarity
                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                           650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                Conservative
                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IBM Compatible
                                                                                                                                                                                                                                                                                                                                          650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HEREWITH
                                                                                                                                                                                                                                         single
                                                                                                                           9.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMAN FIBROUS PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Karl J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/09/034,177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          u
V
                                                                                                                          Score 81.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                       PF-0486 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0.91;
                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                  -----LFGKGSGRVAMAIGGAVLGG 64
                                                                                                                          0.96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----LFGKGSGRVAMAIGGAVLGG
                                                                                                                                         DB 3;
                                                                                                              17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17;
                                                                                                                                       Length 747;
                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                              23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
```

```
US-09-553-498-8

Sequence 8, Application US/09553498

Patent No. 6309861

; GENERAL INFORMATION:
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TOPOLOGY: linear; MOLECULE TYPE: protein US-07-803-633A-13
                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                       RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-07-803-633A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. 5369025
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence 13, Application US/07803633A
Patent No. 5369025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
APPLICANT: Schaeffner, Joerg
APPLICANT: Schwarz, Elisabeth
TITLE OF INVENTION: Process for the production of naturally folded and secreted
FILE REFERENCE: Case 20379
                                                                       APPLICANT: Ambrosius, Dorotl
APPLICANT: Rudolph, Rainer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: LI, Y1
TITLE OF INVENTION: F
TITLE OF INVENTION: F
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/0: FILING DATE: 19911210 CLASSIFICATION: 424 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELLEFAX: 1/2
TELEFAX: 248345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                         797
                                                                                                                                                                                                                                                                                                                                                                               688 FMNGLAELFNGMGQVGQAIGKVVVVGAAGAIVSTISGVSAFMSNPFGALAIGLIIIAGLVA 747
                                                                                                                                                                                                                                                                      121 ERRQQYCRE-FQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                             748 AFL--AYRYVNKLKSNPMKALYPMTTEVLKA-QATRELHGEESDD--
                                                                                                                                                                                                                                                                                                                                                                                                                  17 FLVGCAQNFSRQ-EVGAATGAVVGGVAGQLFGKGSGRV-----AMAIGGAVLGGLIG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
les 36; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Murphy Jr., Gerald M. REGISTRATION NUMBER: 28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                         ERKLEEAREMIKYMALVSAEER 818
                                                                                                                                                                                                                                                                                                                                            SKIGQSMDQQDKIKLN-----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSEE: BIRCH, STEWART, KOLASCH & BIRCH TT: 301 No. 5369025th Washington Street Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22040-0747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (703) 241-2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGAWA, Ryohei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAZERIAN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YANAGIDA, NO.
                                                                                             Dorothee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.3%; Score 78; DB 1; 25.4%; Pred. No. 2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTECTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTECTION AGAINST MAREK'S I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Keyvan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/07/803,633A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5369025oru
                                                                                                                                                                                                                                                                                                                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1644-103P
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                           --;-LERTSID 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                       28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
```

ŋŗ

7;

Ņ

```
CLONE: 2
                                                                        TYPE: amino acids
STRANDEDNESS: si-
MMEDIam
                                                                                                                                                                                                                    TELEFAX: (650) 845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-067-351-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                             IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; SEQ ID NO 8
; LENGTH: 255
; TYPE: PRT
; ORGANISM: E. coli
                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2,
Patent No. !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,132
REFERENCE/DOCKET NUMBER: PF-0511 US
                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (650) 855-0555
                                              LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 31/LIGHT STREET: STREET: STREET STRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Tang, Y. APPLICANT: Hillman, APPLICANT: Corley, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/553,498 CURRENT FILING DATE: 2000-04-20 PRIOR APPLICATION NUMBER: EP99107412.1 NUMBER OF SEQ ID NOS. 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202 SL----TISSMEAEDAATYYCOOWSSNPLTFGAGTKLELKRAAAEO-----KLISEE 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107 SVEPVRTYQRYNKQERRQQYCREFQQKAMI--AGQKQEIYGTACRQPDGRWQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142 MSASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARESGSGSGTSY 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62 LGGLIGSKIGQSMDQQDKIK-LN-------QSLEKVKAGQVTRWRNPDTGNSY 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83 LOMTSLRSEDTAMYYCARDYGAY-WGQGTTVTVSSGGGGSGGGGGGGGGGGGGDIELTQSPAI 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 LOGSSLIIISVFLVGCAQNFSRQEVGAATGAVV----GGVAGQLFGKGSGRVAMAIGGAV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 20.9 es 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2, Application US/09067351
o. 5994081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                        ERANOT02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NOS: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INCYTE PHARMACEUTICALS, INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/09/067,351
                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.3%; Score 77.5; DB 20.9%; Pred. No. 0.65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
```

```
Вþ
                                                  Qy
                                                                                                                   us-09-360-490-2
                                                                        Matches
                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
US-09-360-490-2
"Sequence 2, Application of 6221843"
                                                                                                                                                                                                                TELEFAX: (650) 845-416 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                              TOPOLOGY: line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 551 amino acids
                                                                                                               LIBRARY: KELL
                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,132
REFERENCE/DOCKET NUMBER: PF-0511 US
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                    8 GSSLITISVELVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIG 67
                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2
                                                                                 Local
                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                         STRANDEDNESS: Si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: INCYTE PHARMACEUTICALS, INC. STREET: 3174 PORTER DRIVE CITY: PALO ALTO STATE: CALIFORNIA COLLIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRÅEEREQIKTLNNKFTSFIDKVRFL 170
                                                              Similarity 22.4
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68 SK-----IGOSMDQQDKIKLNQSLEKYKAGQVTRWRNPDTGNSYSVEPVRTY 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 GSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                         94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                    KERANOT02
                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/09360490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Corley, Neil C.
Baughn, Mariah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hillman,
                                                                                                                                                                     single
                                                                                                                                                                                                             845-4166
NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                     9.2%; Score 77; DB 4; 22.4%; Pred. No. 2; itive 28; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                  09/067,351
                                                                                                                                                                                                                                                                                                                                                              US/09/360,490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 77;
Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length 551;
                                                                         Length 551;
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53; Indels
                                             2,
```

```
RESULT 11
US-08-905-590-2
; Sequence 2, Application US/08895590
; Patent No. 6207410
                                                                                                                                                                  В
                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                    밁
                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                   US-08-374-077C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-374-077C-2
                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08374077C Patent No. 6027912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Hall, Linda M.
APPLICANT: Ren, Dejian
APPLICANT: Zheng, Wei
APPLICANT: Dubald, Manuel Marcel Paul
TITLE OF INVENTION: Genes Encoding an Invertebrate Alphal
TITLE OF INVENTION: Calcium Channel Subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                    2508
                                                                                                                                                                  2448 SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                  2389 IGSSNGSIFGGSAGGLGGAGSGGYG-GLGGSSSIRNAFGGSGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 5
                                                                                                                                   138
                                                                                                                                                                                                                                                                                            Local 51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115 QRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                 30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: McGowan, Malcolm M.
REGISTRATION NUMBER: 39,300
REFERENCE/DOCKET NUMBER: 02:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/374,077C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89
                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                  GQGNQTYSS 2516
                                                                                                                                 GOKQEIYGT 146
                                                                                                                                                                                                 -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SK------IGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22314-3187
                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                    Amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٧A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                   2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       703-836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                  9.2%; Score 76.5; I ilarity 24.8%; Pred. No. 17; Conservative 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BURNS, DOANE, SWECKER & MATHIS, LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       022650-264
                                                                                                                                                                                                                                                                                                                                    DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #1.30
                                                                                                                                                                                                                                                                                                   66;
                                                                                                                                                                                                                                                                                                                                  ω
••
                                                                                                                                                                                                                                                                                                                                 Length 2516;
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                  13;
                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

```
Sequence 12, Application US/0791076
Patent No. 5683864
GENERAL INFORMATION:
APPLICANT: Houghton, Michael
APPLICANT: Kuo, George
TITLE OF INVENTION: Combination
TITLE OF INVENTION: Antigens fc
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                      US-07-910-760-12
                                                                                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-895-590-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION: APPLICANT: Hall,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Zheng, Wei
APPLICANT: Dubald, Manuel Marcel Paul
TITLE OF INVENTION: Genes Encoding an
NUMBER OF SEQUENCES: 101
CORRESCONFORM
                                                                                                                                                                                                                                                                                                                                2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 19-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: McGowan, Malcolm M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                         2448 SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2389 IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                   138 GOKOEIYGT 146
                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 39,300 REFERENCE/DOCKET NUMBER: 02:
                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                GQGNQTYSS
                                                                                                                                                                                                                                                                                                                                                                                                                                               -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alexandria
SEE: Chiron Corporation: P.O. Box 8097 (Int. Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٧A
                                                                                                                                                                                                                              Application US/07910760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            703-836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ren, Dejian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hall, Linda M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BURNS, DOANE, SWECKER & MATHIS,
                                                                                                                                                                                                                                                                                                                                2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.2%; Score 76.5;
24.8%; Pred. No. 17;
                                                                                              Combinations of I
Antigens for Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/374,888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              us/08/895,590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2:
                  (Int. Prop. R-440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          022650-263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       an Insect Calcium Channel
                                                                                            Hepatitis C virus
e in Immunoassays f
                                                                                              Immunoassays for Anti-HCV Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4; Length 2516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                  (HCV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

4.

```
US-08-440-519-12
                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 1021 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-910-760-12
                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                       Д
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                            Sequence 12, Application US/08440519 Patent No. 5712087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
                                                                                                                APPLICANT: Choo, Qui-Lim
APPLICANT: Kuo, George
TITLE OF INVENTION: Combinations of Hepatitis C virus (HCV)
NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
ADDRESSE: Chiron Corporation
STREET: P.O. 8097 (Int. Prop. R-440)
                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: BLACKDUTN ESG, Robert
REGISTRATION NUMBER: 03,447
TELECOMMUNICATION INFORMATION:
TELEPHONE: (510) 601-2702
                                                                                                                                                                                                                                                                                                                                                     970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                              149 ROPDGR------WOVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                     912 NKRNTNRRPQDVKFPGGGQIVGGVYLLPRRGPRLGVRATIKTSERSQPRGRRQPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (510) 655-35
                                                                                                                                                                                                                                                                                                                                                                                                                                       852 PAILSPGALVVGVVCAAILRRHVGPGEGAVOWMNRLIAFASRGNHVSPGNSSTNPKPQKK 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       792 GAATAFVGAGLAGAAIGSVGLGKVLIDILAGYGAGVAGALVAFKIMSGEVPSTEDLVNLL 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                               84 QSL-----EKVKAGQ-VTRWRN-----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31 GAATGAVVGGVAGQLFGK-GSGRVANAI----GGAVLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0: FILING DATE: 07-JUL-1992 CLASSIFICATION: 435
                                                                                                    RY: U.S.A.
94662-8097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                      Houghton, Michael
Choo, Qui-Lim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94662-8097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U.S.A.
US/08/440,519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     655-3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.1%; Score 76;
20.9%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/07/910,760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24;
                                                                                                                                                                                                                                                                                                                                                                                                               Robert P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0101.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
```

```
US-08-440-549-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QУ
             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/910,760
FILING DATE: 07-JUL-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                             Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-440-519-12
                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                  GENERAL
                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Chiron Corporation
STREET: P.O. Box 8097 (Int. )
                                                                                                                                                                                                                          STREET: P.C. CITY: Emeryville
                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Combinations of Hepatitis C virus (HCV)
TITLE OF INVENTION: Antigens for Use in Immunoassays for An
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                           APPLICANT: Houghton, Michael APPLICANT: Choo, Qui-Lim APPLICANT: Kuo, George
                                                                                                                                   COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                             CLASSIFICATION:
                                                                                         APPLICATION NUMBER:
FILING DATE: 12-MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNAL P.

NAME: Blackburn Esq., Robert P.

REGISTRATION NUMBER: 30,447

REFERENCE/DOCKET NUMBER: 0101.002

TELECOMMUNICATION INFORMATION:
TELEPHONE: (510) 601-2702
                                                                                                                                                                                                COUNTRY: U.S.A.
ZIP: 94662-8097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (510) 655-354
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149 ROPDGR------WQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 912 NKRNTNERPODVKFPGGGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRROPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    852 PAILSPGALVVGVVCAAILRRHVGPGEGAVQWMNRLIAFASRGNHVSPGNSSINPKPQKK 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       792 GAATAFVGAGLAGAAIGSVGLGKVLIDILAGYGAGVAGALVAFKIMSGEVPSTEDLVNLL 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84 QSL-----EKVKAGQ-VTRWRN-----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31 GAATGAVVGGVAGQLFGK-GSGRVANAI-----GGAVLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/910,760
FILING DATE: 07-UUL-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acids
TOPOLOGY: linear
Blackburn Esq., Robert p.
                                                                                                                                                                                                                                                                                                                                                                         INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42; Conservative
                                                                                                                                                                                                                                                                                                                                                                                             4, Application US/08440549
6312889
                                                                                                                                   IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                      12-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-MAY-1995
                                                                                            US/08/440,549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.1%; Score 76; D
20.9%; Pred. No. 6;
                                                                                                                                                                                                                                       (Int. Prop. R-440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24; Mismatches
                                                                                                                                                                                                                                                                              Immunoassays for Anti-HCV Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-440-549-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 9.1%; Score 76; Best Local Similarity 20.9%; Pred. No. Matches 42; Conservative 24; Mismat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (510) 655-35 INFORMATION FOR SEQ ID NO:
                  INFORMATION FOR SEQ ID NO: 65:
                                                                                                                                                                    APPLICATION NUMBER: US/08/190,199A FILING DATE: 13-JUL-1994 CLASSIFICATION: 435 PRIOR APPLICATION DATA: APPLICATION NUMBER: PCT/GB92/01483
                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1021 amino acids
TYPE: amino acid
                                  FILING DATE: 11-JUN-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: (
FILING DATE: 10-AUG-1
                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9212419.7
FILING DATE: 11-JUN-1992
                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (510) 601-2702
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: WINTER, Gregory P.
TITLE OF INVENTION: TREATMENT OF CELL POPULATIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149 RQPDGR------WQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        912 NKRNTNRRPQDVKFPGGGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 ERRQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    852 PAILSPGALVYGVYCAAILRRHYGPGEGAVQWMNRLIAFASRGNHYSPGNSSTNPKPQKK 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  792 GAATAFVGAGLAGAAIGSVGLGKVLIDILAGYGAGVAGALVAFKIMSGEVPSTEDLVNLL 851
                                                                                                                                                   APPLICATION NUMBER: PCT/
FILING DATE: 10-AUG-1992
                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31 GAATGAVVGGVAGQLFGK-GSGRVAMAI----GGAVLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U.S.A. ZIP: 20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QSL------EKVKAGQ-VTRWRN-----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: PILLSBURY MADISON & SUTRO, L.L.P. 1100 New York Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GOROCHOV, Guy
                                                                                                                                                                                                                                                                                          Microsoft Word
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JONES, Peter T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (510) 601-2702
10) 655-3542
                                    10-AUG-1991
                                                       GB 9117352.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30,447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0101.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----QYCREFQQKAMIAGQKQEIYGTAC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4; Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
```

```
QΥ
                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-190-199A-65
  В
                                             Qy
                                                                                                  DЬ
                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                         Query Match 9.0%; Score 75; DB 2; Best Local Similarity 19.6%; Pred. No. 1.1; Matches 31; Conservative 27; Mismatches 7
201 L----TISSMEAEDAATYYCQQWSSNPLTFGAGTKLEL 234
                                                                                                141 SASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARFSGSGSGTSYS 200
                                                108 VEPVRTYQRYNKQERRQQYCREFQQKAMI--AGQKQEI 143
                                                                                                                                                63 GGLIGSKIGQSMDQQDKIK-LN--------QSLEKVKAGQVTRWRNPDTGNSYS 107
                                                                                                                                                                                              81 LQMTSLRSEDTAMYYCARDYGAYWGQGTLVTVSAGGGGSGGGGGGGGGGGGQIVLTQSPAIM 140
                                                                                                                                                                                                                                           6 LQGSSLIIISVFLVGCAQNFSR---QEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL 62
                                                                                                                                                                                                                                                                                              76;
                                                                                                                                                                                                                                                                                                                                              Length 236;
                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                              Gaps
```

5.

Search completed: October 27, Job time: 10.3938 secs

2002, 11:00:27

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                  Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match
                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB DB
                                                                                                                                                                                                                    Score
                                   105.5
105.5
102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
length: 2000000000
                                                                                                                                                                                                              Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-677-374-2
836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 10:55:57; search time 21.8238 Seconds (without alignments) 824.509 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               747574 seqs, 111073796 residues
                100.0
100.0
97.5
97.5
13.4
12.9
12.6
12.6
12.6
12.6
                                                                                                                                                                                                                                                                                                                                                                   SIDSI/gcgdata/geneseq/geneseqp-embl/AA1980 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1984 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1980 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1991 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1992 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1995 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1995 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1998 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1998 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MNRGCLQGSSLIIISVFLVG.....IYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _Geneseq_032802:*
                                                                                                                                                                                                                    Length
162
162
161
256
256
224
223
223
230
154
                                                                                                                                                                                                                    DB
 AAG78025
AAB81126
AAB81128
AAB81128
AAB81130
AAB20105
AAR24185
AAR34362
AAR05799
ABG15906
                                                                                                                                                                                                                    H
                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               747574
             Piscirickettsia sa
OspA antigen amino
Optimised OspA pro
C17E2 OspA constru
OspA B-cell epitop
Moraxella catarrha
Porphorymonas ging
PomMP-2 gene prod.
Novel human diagno
                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
AAG78025
```

Corynebacterium gl	AAB76750	22	346	9.1	76	5
C glutamicum prote	205	22	346		76	44
	AAB76751	22	324		76	ω
Merozite surface a	87	11	300		76	42
Drosophila melanog	ABB61076	22	2516	٠	76.5	11
Invertebrate calci	AAW01884	17	2516	٠	76.5	0
Neuronal invertebr	AAW01875	17	2516		76.5	39
Pseudomonas aerugi	AAU36520	22	514		76.5	38
Drosophila melanog	ABB61254	22	1251	9.2	. 77	37
Human keratin KERT	AAY52398	21	551		77	36
Antigenic protein	AAP90064	10	429		77	5
Drosophila melanog	ABB69847	22	147		77	34
Novel human diagno	ABG28648	22	900	٠	77.5	ü
E. carotovora PelB	AAY72020	22	255		77.5	32
Expression plasmid	AAB70769	22	255		77.5	<u>μ</u>
PelB-scFv0xazolon	AAB74199	22	255		77.5	30
E. coli expression	AAB11398	21	255	-	77.5	29
Marek's Disease Vi	AAR30169	14	865		78	8
•	AAW27178	18	646		78	27
_	AAB56803	21	618	•	79	26
Neisseria meningit	AAY75098	21	2599		80	25
Novel human diagno	ABG06301	22	2017		80	24
H. pylori ORF Olcp	AAY11028	19	116	•	80	23
	ABB70501	22	542	٠	80.5	22
melano	ABB65791	22	542	٠	80.5	2
Drosophila melanog	ABB65790	22	542	•	80.5	20
Human polypeptide	AAM40157	22	302	٠	80.5	19
man polyp	AAM41943	22	102	•	80.5	8
pes spide	AAY59070	21	718		81.5	17
Nephila clavipes s	AAW53346	19	718	9.7		9
N.clavipes draglin	AAR14308	12	718	9.7		5
$\boldsymbol{\pi}$	AAY40097	20	651	9.7	•	14
Drosophila melanog	ABB58019	22	666	9.8		ü
Drosophila melanog	ABB66232	22	2309	10.3	86.5	2

ALIGNMENTS

Piscirickettsia salmonis polypeptide P10.6

15-JAN-2002 (first entry)

AAG78025;

AAG78025 standard; Protein;

162

Å

```
Simard
Burzio
                                                                                                                                                                                                                                                                                                                                                                                                 Piscirickettsia salmonis; piscirickettsiosis; salmonid rickettsial; septicaemia; SRS; surface antigen; vaccine; antibacterial; fish; ATCC VR-1361.
                                                                                                                                                  11-MAR-2000; 2000GB-0005838
01-JUL-2000; 2000GB-0016080
01-JUL-2000; 2000GB-0016082
29-JUL-2000; 2000GB-0018599
WPI; 2001-639050/73.
N-PSDB; AAH79040.
                                                                                                                                                                                                                                                12-MAR-2001; 2001WO-GB01055
                                                                                                                                                                                                                                                                                      20-SEP-2001.
                                                                                                                                                                                                                                                                                                                          WO200168865-A2
                                                                                                                                                                                                                                                                                                                                                             Piscirickettsia
                                                                                                            (AQUA-) AQUA HEALTH EURO LTD
                                                         ŗz
                                                                         Brouwers H,
                                                                                                                                                                                                                                                                                                                                                               salmonis
                                                                             Jones
                                                                           Ś
                                                                           Griffiths S,
                                                                             Valenzuela P;
```

```
RESULT 2
AAB81126
XX AAB8
XX AAB8
XX AAB8
XX AAB8
XX POIX
XX CA22
XX IT-M
XX IT-M
XX IT-M
XX IT-S
XX WPI;
DR WPI |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                     (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                      Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                            17-SEP-1999;
                                                                                                                                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                  17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                   CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OspA antigen amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB81126 standard; Protein; 162 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB81126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity to protect fish against p. salmonis which causes piscirickettsiosis, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 6; Fig 5; 25pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New nucleic acids encoding an amino acid sequence homologous to the surface antigen present on Piscirickettsia salmonis are useful to protect fish against piscirickettsiosis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                               2001-316844/34.
DB; AAF86246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQYISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VLGGLIGSKIGOSMDQODKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLGGLIGSKIGOSMDQDKIKLNQSLEKVKAGOVTRWRNEDTGNSYSVEEVRTYQRYNKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162;
                                                                                                                                                                  Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                            /label= B_cell_epitope
                                                                                                                                                                Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 836; DB 22;
Pred. No. 3.2e-80;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
RESULT 3
AAB81127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SXX CCCCCCCCCCCXXX
                                                                    WPI;
```

DЪ δÃ 망 Qγ В Ş

```
Method for protecting poikilothermic fish against salmonid ricketts septicaemia and other rickettsial diseases comprises administering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity Matches 162; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local 9
                                                                                                                                                                               (KAYW/)
(BURI/)
                                                                                                                              Kay WW,
                                                                                                                                                                                                                             17-SEP-1999;
                                                                                                                                                              (KUZY/)
                                                                                                                                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                    CA2281913-A1
                                                                                                                                                                                                                                                                                                  17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                              Piscirickettsia Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Poikilothermic fish; Piscirickettsia salmonis; rickettsial pavaccine; OspA; salmonid rickettsial septicaemia; rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Optimised OspA protein 17E2 amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB81127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB81127 standard; Protein; 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals, P. salmonis. The method is used for protecting animals, P. salmonis. The method is also useful for protecting against salmonid sequence represents P. salmonid (SRS) and other rickettsial diseases. The present N-terminal fusion partner is used in a vaccine to create an anti-OspA antihody response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 VLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 VLGGLIGSKIGQSNDQQDKIKLNQSLEKVKAGQVTRWRNDDTGNSYSVEPVRTYQRYNKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 2; Fig 2B; 35pp; English.
                                                                                     2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MNRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ERRQQYCREFQOKAMIAGOKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                         BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MNRGCLOGSSLITISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGA
                                                                         AAF86247
                                                                                                                       Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                           99CA-2281913
                                                                                                                                                                                                                                                             99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                        salmonis
                                                                                                                                                                                                                                                                                                                                                           /label= B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                     Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                       MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 836; DB 22;
Pred. No. 3.2e-80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                 rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
```

```
RESULT 4
AAB81128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                              vaccine; Os
SRS; 17E2;
                                                                                                                                                                                                                                                                                                                             C17E2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animal particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The press sequence represents optimised P. salmonis OspA protein 17E2. The DNA encoding OspA 17E2 (AAR86247) has been optimised for expression in Ecsherichia coll. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed Ospa, or an immunogenic fragment of
                                                                                                                           CA2281913-A1
                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                        Piscirickettsia
                                                                                                                                                                                                                                                                                                    Poikilothermic fish;
                                                                                                                                                                                                                                                                                                                                                     11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                 AAB81128 standard;
                                                                              17-SEP-1999;
                                                                                                     17-MAR-2001.
                                                                                                                                                                                    Region
                                                                                                                                                                                                          Region
                  (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                            OspA construct with N-terminal fusion partner.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158;
         KUZYK M A
                                                                                                                                                                                                                                                                              OspA; sal
22; fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                           salmonid rickettsial
                                                                            99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ن</u>
                                                                                                                                                                                   /label= Undefined_N-terminal_fusion_partner 96..256
                                                                                                                                                                                                                                                        salmonis
                                                                                                                                                                         /label- C17E2_OspA
                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                construct.
                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97.5%;
                                                                                                                                                                                                                                                                                         Piscirickettsia salmonis; rickettsial pathogen; nid rickettsial septicaemia; rickettsial disease
                                                                                                                                                  "Product of OspA gene optimised for expression Escherichia coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OspA protein
                                                                                                                                                                                                                                                                                                                                                                                                 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 815; DB 22;
Pred. No. 5.1e-78;
1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                           161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                            disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       animals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      present
                                                                                                                                                               ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

Matches 158; Query Match

Local

Similarity

97.5%; 98.8%;

Score 815; Pred. No. 9.

DB 22; .3e-78;

Length Indels

Conservative

۳.

Mismatches

0;

Gaps

0;

```
This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence of C17E2, a P. salmonis OspA construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a vaccine to create an anti-OspA antibody response.
Sequence
                                                                                                                                                                                                                                                                                                                 Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                           vaccine
                                                                                                                                                                                                                                                                                                                                                                                 septicaemia
                                                                                                                                                                                                                                                                                                                                                                                                       Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                           containing the OspA protein
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF86248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Burian
                                                                                                                                                                                                                                                                                                                                                         protecting poikilothermic fish against salmonid rickettsial a and other rickettsial diseases comprises administering a ntaining the OspA protein of Piscirickettsia salmonis
256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuzyk
                                                                                                                           present
```

```
Qy
                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                    В
                   (KAYW/)
(BURI/)
(KUZY/)
                                                                                      CA2281913-A1
                                                                                                   Piscirickettsia
                                                                                                                     Poikilothermic vaccine; OspA;
                                                                                                                                          OspA B-cell
                                                                                                                                                                                  AAB81130 standard;
                                              17-SEP-1999;
                                                           17-SEP-1999;
                                                                         17-MAR-2001.
                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                123
                                                                                                                                                                                                                                              157
                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                  RQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                            RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                        RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                   KAY W W.
BURIAN J.
KUZYK M A.
       Burian
                                                                                                                                          epitope peptide
                                                                                                                                                        (first entry)
                                                                                                                       fish; Pis
salmonid
                                               99CA-2281913
                                                           99CA-2281913
                                                                                                                                                                                  Peptide;
                                                                                                                              Piscirickettsia salmonis; rickettsial pathogen;
                                                                                                                       rickettsial
                                                                                                                                           #2
                                                                                                                                                                                  20
                                                                                                                                                                                  A
                                                                                                                       septicaemia;
                                                                                                                       rickettsial
                                                                                                                                                                                                                                                                        156
```

2001-316844/34.

This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals particularly polkilothermic fish, against the bacterial pathogen animals. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other ricketting against pathogen represents an immunogenic epitope of the P. salmonis. The peptide is used to raise rabbit anti-OspA antibodies.

Method for protecting polkilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis

Page 17; 35pp; English.

δÃ

Matches

Y Match
Tocal Similarity
Conserv

13.4%; 100.0%;

Score 112; Pred. No.

; DB 22; , 4.9e-05; DB

Length 20; Indels

0; Gaps

0;

Conservative

0,

Mismatches

```
ARBSULT 6
AAB20105
AAB20105
AC AAB2
XX AAB2
XX AAB2
AC AAB2
XX MOTA
XX INF
PF 23-J
XX 25-J
XX 25-J
XX 1NF
PF 1 Thor
XX INF
PF 1 User
PF 1 User
PF 1 INF
XX INF
PF 1 User
PF 2 User
PF 2 User
PF 2 User
PF 3 User
PF 3 User
PF 3 User
PF 3 User
PF 4 User
PF 4 User
PF 4 User
PF 4 User
PF 5 User
PF 6 User
PF 6 User
PF 7 User
PF 6 User
PF 7 User
PF 8 User
PF 8 User
PF 9 User
The present sequence is that of BASB113 protein from Moraxella catarrhalis strain Mc2931 (ATCC 43617), a causative agent of otitis media in children and pneumonia in adults. The invention provides BASB113 polypeptides, and polypucleotides encoding them, as well as expression vectors, host cells and methods for producing BASB113 polypeptides using recombinant methods. Also claimed is a vaccine composition comprising a BASB113 polypeptide, an immunogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЪ
                                                                                                                                                                                                                            Claim 1; Page 67; 86pp;
                                                                                                                                                                                                                                      New BASB113 polypeptide isolated from Moraxella catarrhalis bacterium, useful for diagnosing and producing vaccines against bacterium, infections such as otitis media and pneumonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Thonnard J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SMIK ) SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-JUN-2000; 2000WO-EP05851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-JAN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W0200100836-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Moraxella catarrhalis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASB311; infection; otitis media; pneumonia; therapy; diagnosis; antibacterial; antimicrobial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Moraxella catarrhalis BASB113 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB20105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB20105 standard; Protein; 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 PVRTYQRYNKQERRQQYCRE 129
                                                                                                                                                                                                                                                                                                                                                                            2001-112458/12.
)B; AAF30043.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 PVRTYQRYNKQERRQQYCRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99GB-0015044.
                                                                                                                                                                                                                            English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
```

AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PC) polypeptide sequences given in AAX AAX34583. AAX91802 to AAX91989 represent PCR primers used in the

AAY34318 to the

```
RESULT 7
AAY34487
                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                              Claim 1;
                                               gingivitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-MAY-1998;
29-JUL-1998;
                                                                                                                                                                    30-JAN-1998;
10-MAR-1998;
09-APR-1998;
23-APR-1998;
                                                                          N-PSDB;
                                                                                                   Ross
                                                                                                                                                                                                       04-AUG-1998;
10-DEC-1997;
31-DEC-1997;
                                                                                                            Agius
                                                                                                                        (CSLC-) CSL LTD.
                                                                                                                                                              05-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                        10-DEC-1998;
                                                                                                                                                                                                                                                          17-JUN-1999.
                                                                                                                                                                                                                                                                         WO9929870-A1.
                                                                                                                                                                                                                                                                                          Porphorymonas
                                                                                                                                                                                                                                                                                                         Porphorymonas gingi
vaccine; antigenic.
                                                                                                                                                                                                                                                                                                                              Porphorymonas gingivalis protein PG3.
                                                                                                                                                                                                                                                                                                                                                      25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                       AAY34487;
                                                                                                                                                                                                                                                                                                                                                                                  AAY34487 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fragment of a BASB113 polypeptide, or a polypeptide having at least 85% amino acid sequence identity to BASB113, or comprising a polypeutide encoding such a polypeptide. A claimed method of polypeptide or antibody. A claimed therapeutic composition useful in treating humans with M. catarrhalis infection comprises at least polypeptides also have utility in raising specific antibodies,
                                                                                             , CT,
                                                                      1999-385613/32.
DB; AAX91705.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 GSSLIIISVELVGCAQNESRQEVGAATG-----AVVGGVAGQLEGKGSGRVAMAIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                       Page 469; 588pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                   EKTGRDAILGAAVGAAAGAYMERQAK----QIEQQMQGTGVTVTHDTDTGN 107
                                                                                                                                                                                                                                                                                                                                                                                                                                   -----AVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGN 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GVVLLASSMALAGCANTGT---TGNGTGFGGANVNKAVIGAVAGAL---GGTAISKATGG
                                             Porphorymonas gingivalis peptides
                                                                                               Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
36; Conserv
                                                                                                                                                                98AU-0002264.
98AU-0002911.
98AU-0003128.
                                                                                                                                                                                         98AU-0005028.
97AU-0000839.
97AU-0001182.
98AU-0001546.
                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    224 AA;
                                                                                                                                         98AU-0004917
                                                                                                                                                         98AU-0003338
                                                                                                                                                                                                                                                                                                         gingivalis; PG; periodontal disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                     98WO-AU01023
                                                                                            Hocking DI
Webb EA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.9%;
                                                                                                    DM,
                                                                                                                                                                                                                                                                                                                                                                                   223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 108;
Pred. No. 0.
                                                                                               Margetts MB,
                                                                                                                                                                                                                                                                                                                                                                                  Ā
                                         for preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 22
.0028;
                                                                                              Patterson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35;
                                                                                                                                                                                                                                                                                                       gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                              MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                             10-DEC-1997;
31-DEC-1997;
30-JAN-1998;
10-MAR-1998;
09-APR-1998;
                                                                                                                                                                                                                    05-MAY-1998;
22-MAY-1998;
29-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against porphorymonas gingivalis. Probes can be used to detect porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease
AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PG) polypeptide sequences given in AAY34318 to AAX94583. AAX91802 to AAX91899 represent PCR primers used in the isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can
                                                                                                                                                               Ross
                                                                                                                                                                                                                                                                                                                    04-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                              17-JUN-1999.
                                                                                                                                                                                                                                                                                                                                                                                   WO9929870-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                       Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY34362 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 especially
                                                                            Claim 1; Page 325-326;
                                                                                                                                N-PSDB;
                                                                                                                                                                           Agius
                                                                                                                                                                                                                                                                                                                                        10-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                       Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                            vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Porphorymonas gingivalis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY34362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                           Antigenic Porphorymonas
                                                                                                                                                                                                                                                   23-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-AUG-1999
                                                                                                                                                                                               (CSLC-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66 ALIGKKMDKQKK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAM-AIGGAVLGGLIG
                                                                                                                                                              BC,
                                                                                                                                 1999-385613/32
DB; AAX91580.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                CSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                          monas gingivalis;
antigenic.
                                                                                                                                                               Rothel
                                                                                                                                                              Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gingivitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             223
                                                                                                                                                                                                LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                       gingivalis
                                                                                                                                                                                                                   98AU-0001546.
98AU-0002264.
98AU-0002911.
98AU-0003128.
98AU-0003338.
98AU-0003654.
98AU-0004917.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                              97AU-0000839
                                                                                                                                                                                                                                                                                                                                       98WO-AU01023
                                                                                                                                                                                                                                                                                                                   98AU-0005028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.6%;
                                                                                                                                                              Hocking DN
Webb EA;
                                                                         588pp;
                                                                                                          gingivalis peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                     PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 105.5;
Pred. No. 0.00
12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          230
                                                                                                                                                                          DM,
                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                     periodontal disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          À
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PG3
                                                                                                                                                                        Margetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5; DB<sub>2</sub>0;
).0051;
                                                                                                                                                                           MB,
                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31;
                                                                                                           preventing
                                                                                                                                                                          Patterson
                                                                                                                                                                                                                                                                                                                                                                                                                                     gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                           ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
```

Ş

30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIĞSKIGQSMDQQDKIKL

Query Match Best Local S Matches 21

Similarity 39.0 21; Conservative

12.2%;

9

Score 102; DB 11; Pred. No. 0.0074; 9; Mismatches 23;

Length 154;

Indels

0

Gaps

0,

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        be used assays.
                The PBOMP proteins were isolated from a PBOMP-enriched insoluble cell wall fraction from physically disrupted cells of H. influenzae and then solubilising the PBOMP from the cell wall fraction by heating in the presence of a detergent or digesting the cell wall fraction with lysozyme, opt. in the presence of a detergent. The genes encoding the PBOMP proteins were isolated by screening a DNA library with an oligonucleotide probe based on the amino acid sequence of the PBOMP protein, or using antibodies to PBOMP.
                                                                                                                                                                                                                                                                                                                                                                           Outer membrane proteins;
Praxis Biologics Outer M
 Sequence
                                                                                                                   Disclosure;
                                                                                                                                       diagnosis.
                                                                                                                                                Outer membrane protein epitopes of Haemophilus the prodn. of antibodies, in vaccines and for I
                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                             WPI; 1990-115815/15
                                                                                                                                                                                                                 Anilionis A,
                                                                                                                                                                                                                                                          01-SEP-1988;
21-AUG-1989;
                                                                                                                                                                                                                                                                                          31-AUG-1989;
                                                                                                                                                                                                                                                                                                                                    WO9002557-A
                                                                                                                                                                                                                                                                                                                                                       Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                         PBOMP-2 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR05799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR05799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               especially
                                                                                                                                                                                                                                                                                                                22-MAR-1990
                                                                                                                                                                                                                                      (PRAX-) PRAXIS BIOLOGICS IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGKKMDKQKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SKIGQSMDQQDK 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAM-AIGGAVLGGLIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 36.26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to detect Porphorymonas gingivalis in standard hybridisation Porphorymonas gingivalis is involved in periodontal disease lly gingivitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard; Protein; 154
  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230 AA
                                                                                                                 Fig 15;
                                                                                                                                                                                                                                                                                                                                                       influenzae.
                                                                                                                                                                                                                                                                                                                                                                                                            prod
                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                 Seid
  A
                                                                                                                                                                                                                                                           88US-0239572.
89US-0396572.
                                                                                                                                                                                                                                                                                         89WO-US03779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                  RC,
                                                                                                                 164pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.6%;
                                                                                                                                                                                                                                                                                                                                                                             Membrane
                                                                                                                                                                                                                  Deich
                                                                                                                                                                                                                                                                                                                                                                                        PBOMP-2;
                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 105.5; DB Pred. No. 0.0053;
                                                                                                                                                                                                                 RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                       immunisation;
                                                                                                                                                                                                                 zlotnick
                                                                                                                                                                                                                  GW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                                                                                                                                                  prodn.
                                                                                                                                                  influenzae- used in prodn. of reagents for
                                                                                                                                                                                                                  Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                  BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

В

62

18-FEB-2002

95

```
The invention relates to isolated polynucleotide (I) and CC polymerase (II) sequences. (I) is useful as hybridisation probes, CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC for identifying expressed genes. (I) is useful in gene therapy techniques (II). (II) is useful in gene therapy techniques (CC quantitating a polypeptide in tissue, as molecular weight in medical cCC quantitating a polypeptide in tissue, as molecular weight in medical a food supplement (II) and its binding partners are useful in medical cCC disorders involving aberrant protein expression or biological activity. CCC diagnostics, forensics, gene mapping, identification of mutations in CCC and to produce other types of data and products dependent on DNA and CCC and to produce other types of data and products dependent on DNA and CCC specification, but was obtained in electronic format directly from WIPO CCC at fire winds of this patent did not appear in the printed cat fits winds other than and sequences of the invention.
                                                                              185 IISILPAKVAVDNSQNKRNAQAFGALIGAVAGGVIGHNVGSGSNSGTTAGAVGGGAVGAA 244
                                                                                                                      13 IISVFLVGCAQNFSR-----QEVGAATGAVVGGVAGQLFGKG--SGRVAMAIGGAVLGGL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutation responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 20; SEQ ID No 46265; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel human diagnostic protein #15897.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABG15906 standard; Protein; 309 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGTLGGGALGGIAGSTIGGGRQQAIAAVVGAIGGAIAGSKIEEKNSQVNGAEL 114
                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-0540217
2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                               11.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tang
                                                                                                                                                                                                     Score 98; DB 22;
Pred. No. 0.047;
1; Mismatches 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΥŢ
                                                                                                                                                                                                        39;
                                                                                                                                                                                                                                                     Length 309;
                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutations
                                                                                                                                                                                               14;
                                                                                                                                                                                       Gaps
                                                                                                                                                                                       3
                                          The present sequence is that of the orb-weaver spider (Nephila CC clavipes) recombinant silk protein pETNoDS. The invention CC provides methods for purifying and spinning spider silks and other CC structural proteins. Organic acids are used to lyse recombinant CC delived cells), and enrich the purity and yields of structural proteins samples (such as non-recombinantly CC proteins by hydrolysing many of the macromolecules while leaving CC resulting lysate is further purified by in-exchange or affinity CC chromatography and processed into an aqueous-based mixture for CC into vector pET24 for recombinant expression in Escherichia coli, CC containing denaturant (3 M guanidine-HC1) and by affinity CC chromatography on nickel-WTA agarose. Products obtained using the materials including films, fibres, woven articles, sutures.
materials including films, fibres, woven articles, su ballistic protection, parachutes and parachute cords. method has the following advantages over prior art: i fewer steps, requires less time and smaller volumes o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
AAB82611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 41-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Recovering structural polypeptides in a biological sample, useful for purifying and spinning spider silks and other structural proteins, comprises treating the sample containing the polypeptides with an actual containing the polypeptides with a containing the polypeptides with actual containing the containing the polypeptides with actual containing the contai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-483136/52.
N-PSDB; AAH26304.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mello CM, Arcidiacono
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BUTL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-2000; 2000WO-US30086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ARCI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MELL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200153333-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "encoded by CGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spider; orb-weaver; silk protein; pETNcDS; structural protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nephila clavipes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spider recombinant silk protein pETNcDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB82611 standard; Protein; 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB82611;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MELLO C M.
ARCIDIACONO S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGSMVNDKTLMEGVSLTYKEGTKVYTSTQVGKEFQFT 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IGSKI-----GQSMDQQDKIKLNQSLEKVKAGQVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BUTLER M M.
US SEC OF ARMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-0490291.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "encoded by GAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "encoded by TAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Butler MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
```

;*P

sutures,

with an acid

δÃ

Query Match Best Local

l Similarity 33; Conserv

Sequence

309 AA;

1

```
RESULT 12
ABB66232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSSSSS
망
                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
 2124
                                                                                                                                                                       capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), approach the sequences (ABL16176-ABL30511).
                                                                                                  Sequence
                                                                                                                        The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                   The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 25488;
                                                                                                                                                                                                                                                                                                      New isolated nucleic acid genes from Drosophila and interactions -
                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-656860/75
N-PSDB; ABL10335.
                                                                                                                                                                                                                                                                                                                                                                                           Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                           23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster polypeptide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         АВВ66232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABB66232 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      results in better recovery of protein at higher purity (70-99%), is easy to scale up, and the fibres are spun in an environmentally benign solution reducing hazardous waste accumulation and cost.
                                                                                                                                                                                                                                                                                                                                                                                                                  (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila;
                                                                                                                                                              (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320 QGAGAAAAAAAAGGAGQGGLGGQGAGAAAAAAAGGAGQGGLGGQGAGQ 366
                        23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
QQQQQRQVGGGNGPSMNALGGRGSGAVGSGSGN-----GGGGGGGGAGGSQVGGNGGGNGV 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QEVGAATGAVVGGVAGQ--LFGKGSGRVAMAIGGAVLGGLIGSKIGQ
                      QNFSRQEVGAATGA---VVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK 79
                                                                                                                                                                                                                                                                                                                                                                                         JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                  2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 528 AA;
                                                                                                                                                                                                                                                                                                                                                                                         Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                            10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10.9%;
51.1%;
                                                                                                                                                                                                                                                                                                                                                                                         Li
                                                                                                                                                                                                                                                                                                                                                                                         PWD,
                                                                                                                                                                                                                                                                                                               detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cel
                                               18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 91;
Pred. No.
                                                            Score 86.5;
Pred. No. 9
                                                                                                                                                                                                                                                                          21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                         Myers
                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                           EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB .
                                                        DB
,.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID NO 25488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19;
                                                 55;
                                                                       22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                 Indels
                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
                                                                         2309;
                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                 cell-cell
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                       WIPO
                                                                                                                                                                                                                                       is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                5
```

```
RESULT 13
ABB58019
                       Qy
                                                 망
                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
망
                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                   Matches
                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                      The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invent useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2179
                                                                                                                                                                                       (ABB57737-ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB58019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB58019 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2231 QRAQ 2234
                                                                                                                                                                                                                                                                                                                             Disclosure; SEQ ID NO 849; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                              New isolated nucleic
                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; ABL02122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster polypeptide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-MAR-2002
                                                                                                                                                                          at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                       interactions
                                                                                                                                                                                                                                                                                                                                                                 genes from Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                            Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         139
522
                                                 463
                        91
                                                                          31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80 IKLNOSLEKYKAGOVTRWRNP-DTGNSYSVEPVRTYORYNKQERROQYCREFOOKAMIAG
SGSGSHPGTPTSLHAHSANGTSSSLLGGGLHLATPHQMVAAGGSPVMLHQQQQQQQQHQQQ
                        AGQVTRWRNPDTGNSYSV----
                                                                        GAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 90
                                                                                                                                                                                                                                                                                                                                                                                                                    2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QKQE 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSVGQS----GGGGQGRYPTPIQRPNNYPQHP----QQQQQQQQQQQQQQQREQAAAAAVAA 2230
                                                 GPQTGGAGGGGGSSSGNGAGTLAVS-GSYTTGAGAGSGTGSSNSNSNSGGSSGSVSGSV 521
                                                                                                              Similarity
                                                                                                                                                  666
                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                developmental biology;
                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                  Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                            9.88;
                                                                                                                                                                                                                                                                                                                                                                 acid detection reagent for detecting and for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ľ
                                                                                                                                                                                                                                                                                                                                                                                                                                            PWD,
                                                                                                22;
                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                                                                                                                            Myers
                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                              No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Œ,
                                                                                                            DB 22;
6.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ID NO
                        ----EPVRTYQRYNKQERRQQ 125
                                                                                                   58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           849
                                                                                                                                                                                       format directly from
                                                                                                                        Length 666;
                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  insecticide;
                                                                                                                                                                                                                                                                                                                                                                    1000 or more and cell-cell
                                                                                                                                                                                                                                                                                       n reagent
                                                                                                   26;
                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138
581
                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                        WIPO
                                                                                                                                                                                                                                                                                         ŝ
                                                                                                   2
```

Š

126

YCREFQQKAMIAGQKQ 141

```
RESULT 15
AAR14308
ID AAR14
XX
AC AAR14
XX
DT 15-JAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
ANY40097
ID ANY400
XX ANY40
XX Spide
XX Spide
XW Spide
KW Spide
KW Spide
KW Hormo
OS Nephi
XX I1-FE
XX I1-FE
XX I1-FE
XX I1-FE
XX WPI;
XX WPI;
XX Cosme
PT For h
XX Cosme
PT For h
XX Clain
XX Clain
XX Clain
XX Spidr
CC 
                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
  15-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                              AAR14308;
                                                                                                        AAR14308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents the natural spider silk protein spidroine major 1. The protein improves the moisturizing/softening action of the compositions. The protein, and its fragments are used in cosmetic or dermatological compositions. These compositions are used use as hair or skin care products; and make up or sunscreens. As the protein is a good, persistent film-formers on the skin agents that are generally difficult to administer, e.g. vitamins, noisturizers or agents for treating disorders of the
                                                                                                                                                                                                                          551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                      491 OGAGAAAAAYGAGQEGIROOGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3; Fig 1; 32pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cosmetic or dermatological composition containing spider silk protein, for hair or skin care, in make-up or sunscreens
                                                                                                                                                                                                                                                                       65 LIGSKIGO 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1999-510729/43
                                                                                                                                                                                                                                                                                                                                                                               28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Philippe M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (OREA ) L'OREAL SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FR2774588-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Spider silk protein; spidroine major 1; cosmetic; make-up; dermatological compositions; hair care; skin care; sunscreen; hormone; moisturizer; skin disorder; skin disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nephila clavipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spider silk protein spidroine major 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY40097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY40097 standard; protein; 651
                                                                                                                                                                                                                                                                                                                                        OEVGAATGAVVG----GVAGQ------LFGKGSGRVAMAIGGAVLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                582 000000000000000000 597
                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                           standard; Protein; 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    651 AA;
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Garson JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98FR-0001614.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98FR-0001614.
                                                                                                                                                                                                                                                                                                                                                                                                                                     9.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arraudeau JP;
                                                                                                                                                                                                                                                                                                                                                                                                                 ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 81.5;
Pred. No. 6
                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             651;
                                                                                                                                                                                                                                                                                                                                                                                              23;
                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                         2
```

Search completed: October 27, Job time: 23.8238 secs

2002, 10:57:54

2;

```
Ъ
                      δÃ.
                                                                                                                                   Ъ
                                                                  οy
                                                                                        Matches
                                                                                                 Query Match
Best Local
                                                                                                                                               The spider silk protein contains a basic 34 amino acid repeat. The repeat itself contains 3 regions. The first comprises 0-9 amino acids with a sequence AgR(GGX)2. This region is not highly conserved. The second region has a sequence GAG(A)x which is highly and is 18-10 amino acids long. The third segment is (GGX)2 and is 15 amino acids long and is very highly conserved. In most cases X is A,Q, Y or L. Removal of the poly-(Ala) segments results
                                                                                                                                  Sequence
  551
                             491 ÓGAĞAAAAAYGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG
                                                                                                                                              in a silk having lower elasticity.
                                                                                                                                                                                                                                                             DNA encoding spider silk protein-1 and 2 and variants - isolated from Nephila clavipes, for prodn. of spider silk protein and fibres having desired characteristics
                                                                                                                                                                                                                                               Claim 15; Page 23; 48pp; English.
                  65 LIGSKIGO 72
                                                 28 OEVGAATGAVVG----GVAGO------LFGKGSGRVAMAIGGAVLGG
                                                                                                                                                                                                                                                                                                                         N-PSDB;
                                                                                                                                                                                                                                                                                                                                WPI; 1991-312199/43.
                                                                                                                                                                                                                                                                                                                                                                          (UYWY-) UNIV OF WYOMING
                                                                                                                                                                                                                                                                                                                                                        Lewis RV,
                                                                                                                                                                                                                                                                                                                                                                                                                      18-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                    20-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                              23-OCT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP452925-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nephilia clavipes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein superfibre; major ampullate silk; orb web spider.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N.clavipes dragline silk protein-1.
LGGQGAGQ 558
                                                                                    l Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                         AAQ14183
                                                                                                                              718 AA;
                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                      Xu M,
                                                                                                                                                                                                                                                                                                                                                                                                90US-0511792
                                                                                                                                                                                                                                                                                                                                                                                                                    91EP-0106217.
                                                                                                                                                                                                                                                                                                                                                    Hinman
                                                                                          9.7%;
                                                                            Score 81.5; p
Pred. No. 7.6;
3; Mismatches
                                                                                Ψ
                                                                                         .
6;
                                                                                                    В
                                                                            17;
                                                                                                 12;
                                                                                               Length 718;
                                                                          Indels
                                                                         23;
                                                                       Gaps
                              550
                                                  64
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on:
  score
                                                                                                                                                                                                                          Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
Bd
 313.5
313.5
266.5
266.5
259.5
259.5
259.5
259.5
279.5
237.5
237.5
237.5
237.5
237.5
237.5
                                                                                                                                                            Score
                                                                                                                                                                                                          ŝ
                                                                                                                                                                                                                                        SPTREMBL_19:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_human:*
5: sp_inverte
6: sp_mammal:
7: sp_mhc:*
8: sp_organe
9: sp_phage:
10: sp_phage:
11: sp_rode:
11: sp_rode:
12: sp_viru
13: sp_vert
14: sp_unc;
15: sp_rvi
16: sp_bac
17: sp_arc
                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٠
                                                                                                                                                                                                                   greater than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein search,
                                                                                                                                                                                                         derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                              length:
length:
                                                                                                                                                          Query
Match
  100.0
37.5
31.9
31.2
31.0
31.0
31.0
31.0
31.0
29.5
29.5
28.4
28.4
28.4
28.3
28.3
28.3
28.3
28.3
                                                                                                                                                                                                        is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, rived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-677-374-2
836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 11:00:01; Search time 18.1865 Seconds (without alignments) 1540.986 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            562222 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                          Listing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MNRGCLQGSSLIIISVFLVG.....IYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyright
                                                                                                                                                                                                                                                                                                                                                                         sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                                                                                                                                                                                            sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                               sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                  sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                          sp_invertebrate:*
                                                                                                                                                                                                                                                                                          sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                           sp_plant:*
                                                                                                                                                                                                                                                                                  sp_vertebrate: *
                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                         n Match 0%
n Match 100%
first 45 su
 GenCore version (c) 1993 - 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             172994929 residues
                                                                                                                                                            ВB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapext
  Q985G4
Q9AGC7
Q92R89
                             Q9K2N6
031065
09K4W8
Q53154
Q59F9Q9
Q9F9Q1
Q9F0Q1
Q52637
Q9L522
031208
                                                                                                             Q9F9K8
O54381
Q9F9F2
O52252
                                                                                                                                                            H
                                                                                                                                                                                                                                                                                                                                                                                                                          summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.5
                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mode1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.1.3
Compugen Ltd
O9f9k8 pisciricket
O54381 rickettsia
O9f9f2 rickettsia
O52252 rickettsia
O52252 rickettsia
O9k2n6 male-killin
O31065 rickettsia
O9k4w8 male-killin
O53154 rickettsia
O9f9q9 rickettsia
O9f9q7 rickettsia
O9f9q7 rickettsia
O9f9q7 rickettsia
O91522 rickettsia
O91522 rickettsia
O91208 rickettsia
O91208 rickettsia
O9agc7 rickettsia
O9agc7 rickettsia
O9agc7 rickettsia
O9agc7 rickettsia
                                                                                                                                                           Description
```

:		7	88.5	œ	89	90	91	92	93.5	94	4	95.5	96	86	86	99	99.5	101.5	105.5	106	106.5	107.5	107.5	108.5	110.5	111	112	116	128.5
	•	٠		•	٠	10.8					11.3		11.5	•		11.8			12.6	12.7				13.0					15.4
	201	407	216	161	137	105	544	105	257	809	838	79	223	220	172	154	83	304	223	155	221	155	153	155	232	139	257	154	182
	16	16	16	2	16	16	Ŋ	16	16	10	N	16	16	N	16	16	16	16	N	2	16	N			16	ນ	16	16	16
	0930x4	031557	Q98NA9	068681	Q9нU07	Q983Y0	046171	Q98P93	Q9A8M8	Q9SUX1	Q9AL49	Q92NT4	Q9KSR1	Q9XAX8	P76572	Q9CN83	Q92LP2	Q91762	Q9XCA4	Q9RB08	Q92ST9	Q9RA95	069776	Q9F6B1	Q9A3X8	Q52854	Q9PGX0	Q914S1	Q9HXI3
	rhizobium	O31557 bacillus su	Q98na9 rhizobium l	7	Q9hu07 pseudomonas		O46171 nephila cla	Q98p93 rhizobium l		Q9sux1 arabidopsis	Q9al49 shigella fl	Q92nt4 rhizobium m	Q9ksr1 vibrio chol	Q9xax8 pseudomonas	P76572 escherichia	Q9cn83 pasteurella		Q9i762 pseudomonas	Q9xca4 porphyromon	Q9rb08 pectobacter	9	Q9ra95 serratia sp	069776 rhizobium e	Ф	Q9a3x8 caulobacter	Q52854 rhizobium l		Q9i4s1 pseudomonas	Q9hxi3 pseudomonas

ALIGNMENTS

```
RESULT

QUESAR

AC
QUE
밁
                                                           οy
                                                                                                                                  Вb
                                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9F9K8;
Q1-MAR-2001 (TrEMBLrel. 16, C
01-MAR-2001 (TrEMBLrel. 16, L
01-MAR-2001 (TrEMBLrel. 16, L
17 KDA ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kuzyk M.A., Burian J., Thornton J.C., Kay W.W.;
"Identification of a genus-common Rickettsial surface ar
almonid pathogen Piscirickettsia salmonis.";
Submitted (SEP-199) to the EMBL/GenBank/DDBJ databases.
EMBL; AF184152; AAG17000.1;
SEQUENCE 162 AA; 17661 MW; DDE99E6FD94A527E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Piscirickettsia salmonis.
Bacteria; Proteobacteria;
Piscirickettsia.
NCBI_TaxID=1238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=LF-89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                  121
121
                                                                                                                                     61
                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                ERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
ERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                              VLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                     VLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ
                                                                                                                                                                                                                                                                                                                                                                                                         162;
                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; ilarity 100.0%; Conservative 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                      0:
                                                                                                                                                                                                                                                                                                                                                                                                  Score 836; D
Pred. No. 9.6
D; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         subdivision; Piscirickettsia group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
.6e-68;
                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antigen
                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
, B
                                                                                                                                                                                                                                                                                                                Q9F9F2
AC Q9
                                                                                                                                                                                                    Query Match
Best Local S
Matches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
05431
ID 0543
AC 0543
AC 0543
DT 01-JI
DT 01-JI
DT 01-JI
DT 01-JI
DT 01-JI
CO Rick
OC Rick
OC Rick
OX NOBE
RN (1]
RP SEGU
RX MEDL
RA Davi
RT "RIC
RL Curr
DRIC Curr
DRIC Curr
DRIC Curr
DRIC CURT
RT "RIC
RT "RIC
RT CURT
RT NON
FT NON
FT NON
SEQUI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9F9F2
Q9F9F2;
Q9F9F2;
Q1-MAR-2001 (TrEMBLTel. 16, Cr
Q1-MAR-2001 (TrEMBLTel. 16, Lc
Q1-DEC-2001 (TrEMBLTel. 19, Lc
Q1-DEC-2
                                                                                                                                                                                                                                                           Spotted fever group.";
Int. J. Syst. Evol. Microbiol. 51:339-347(2001).
EMBL; AF195118; AAG28452.1; -
SEQUENCE 159 AA; 16497 MW; 34C5B0Z0AF470A1F
                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

MEDLINE=21217364; PubMed=11321078;

Bouyer D.H., Stenos J., Crocquet-Valdes P., Moron C.G., Popov V.L.,
Zavala-Velazquez J.E., Foil L.D., Stothard D.R., Azad A.F.,
                                                                                                                                                                                                                                                                                                                                             Walker D.H.;
"Rickettsia felis: molecular characterization of a new member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsia felis (Rickettsia azadi).
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=42862;
                                      5 SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG 64
                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : |||||||||||:
| 132 KAYGTACRQPDGQWQVV
                                                                      SSLIIISY---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142 EIYGTACROPDGRWQVI 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

MEDLINE~98087556; PubMed-9425244;
Davis M.J., Ying Z., Brunner B.R., Pan
"Rickettsial relative associated with
Curr. Microbiol. 36:80-84(1998).
EMBL; U76907; AAC02809.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiese; Rickettsia.
NCBL_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82 LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYORYNKQERROQYCREFQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      054381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-JUN-1998
                                                                                                                                                                               h 34.8%; So Similarity 38.1%; Po 61; Conservative 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY----KNNTGQYCREYTQTVVVGGKQQ 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NKOGSGTLIGGTLGGLVGSQFGGGTGRLAAVGAGALLGAILGNOIGAGMDEQDRKLAELT 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRQEVGAATGAVVGGVAGQLEGKGSGRVANAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -JUN-1998 (TremBirel. 05, Created)
-JUN-1998 (TremBirel. 06, Last sequence update)
-NOV-1998 (TremBirel. 08, Last annotation update)
-KDA COMMON-ANTIGEN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TremBLrel 16, Created)
(TremBLrel 16, Last seq
(TremBLrel 19, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15050 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148
                                                                                                                                                                                           Score 291; DB 2
Pred. No. le-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last annotation
                                                                                                                                                                                                                                                                 34C5B020AF470A1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 313.5;
Pred. No. 9e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A7AFEEFDEOAEEE4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pantoja A., Ferwerda
ith papaya bunchy top
                                                                                                                                                                                                         DB 2; Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update
                                                                                                                                                                      57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42;
                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                erda F.H.;
top disease.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148;
                                                                                                                                                                                                                                                                                                                                                                  of the
                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
```

Ş

```
RESULT
Q9K2N6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K., Schulenburg H.J.G.V.D., Majerus M.E.N.;
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
"On the evolution of male-killing: Monophyletic origin and horizontal generic ladybirds, Adalia bipunctata (a-Proteobacteria) from two confoleophera: Coccinelidae) ", Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ269518; CAB96383.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 4
052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                             Q9K2N6
Q9KNN6;
PRELIMINARY;
PRT; 144 AA.
Q9KNN6;
Q1-CCT-2000 (TrEMBLrel. 15, Created)
Q1-CCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-CCT-2000 (TrEMBLrel. 15, Last annotation update)
Q1-DCT-2000 (TrEMBLrel. 15, Last annotation update)
Q1-DCT-2000 (TrEMBLRel.) (FRAGMENT).
Q17KDA ANTIGEN (17 KDA ANTIGEN) (FRAGMENT).
                                                                                                                                                                            male-killing Rickettsia from Adalia bipunctata.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω<sub>V</sub>
                                                                                                                                                                          NCBI_TaxID=38028;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                              122 KQQKAYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
Billings A.N., Teltow G.J., Walker D.H.;
"Molecular characterization of a novel spotted fever gro
Species from Ixodes scapularis in Texas.";
Submitted (CCT-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsia cooleyi.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120 QERRQQYCREFQQKAMIAGOKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                              QKQEIYGTACRQPD 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120 RNSTGOYCREYTOTVVIGGKQQKAYGNACKQPDGLWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                              ELTSQRALEAAPSGSSTEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGG
                                                                                                                                                                                                                                                                                                                                                                                                                RGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK--- 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLIGSKIGQSMDQQDK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AVLGGQIGAGMDEQDRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137 AA; 14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 (Trembirel 06, 18 (Trembirel 106, 11 (Trembirel 19, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 266.5;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.4e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                              update)
                                                                                                                                                                                 Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
```

```
RESULT
Q9K4W8
ID Q0
AC Q0
DT 00
DT 00
                                                                                                  Ş
                                                                                                                                   Ş
                                                                                                                                                         밁
                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                  밁
                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           os
                                                                                                                                                                                             Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Q9K4W8;
Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                        O31065 PRELIMINARY; PRT; 137 AA.
O31065; O9WW02;
O1-JAN-1998 (TrEMBLrel. 05, Created)
O1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
O1-OCT-2001 (TrEMBLrel. 18, Last annotation update)
17 KDA ANTIGEN (17 KDA PROTEIN) (FRAGMENT).
                                                                                                                                                                                                                                                          Stenos J., Roux V., Walker D., Raoult D.;
"Rickettsia honei sp. nov., the aetiological
spotted fever in Australia.";
Int. J. Syst. Bacteriol. 48:1399-1404(1998).
EMBL; AF027124; AAB81846.1;
EMBL; AF060706; AAD20231.1;
                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia honei.
Bacteria; Proteobacteria; alpha subdivision;
                                                                                                                                                                                                                                                                                                                                              Billings A.N., Yu X.-J., Submitted (SEP-1997) to
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-TT-118;
Billings A.N., Yu
                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiaceae; R
NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                   MEDLINE=99045882; PubMed=9828442;
                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132
                                                                                  125 KAYGNACRQPD 135
                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                           26 SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KAYGNACRQPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQQ 131
                                                                                                                                                         NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EIYGTACROPD 152
                                                                                                   EIYGTACRQPD
                                                                                                                     SQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                     LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ
                                                                                                                                                                                                                                                   AF060704; AAD20230.1; -.
                                                                                                                                                                                            Similarity 39.7 52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                 137 AA; 14167 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144
(TrEMBLrel. 15, (TrEMBLrel. 15, (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14785
                                                                                                                                                                                                     31.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31.2%; Score 260.5; DB 2
39.7%; Pred. No. 5.1e-16;
tive 22; Mismatches 48
                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                       Teel P.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₩.
                                                                                                                                                                                             22;
Created)
Last sequ
Last anno
                                                                                                                                                                                            Score 259.5; |
Pred. No. 5.9e
22; Mismatches
                                                                                                                                                                                                                                                                                                                                              EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C8254739CCA56AE7 CRC64;
                                                                                                                                                                                                                                  75BC1D0D745B428C CRC64;
sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                        Walker D.H.;
                                     144
                                                                                                                                                                                            .9e-16;
les 48;
                                     A
                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                 agent
                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48;
                                                                                                                                                                                                               2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 144;
                                                                                                                                                                                                               Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                 of Flinders
                                                                                                                                                                                              9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                 Island
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                             Gaps
                                                                                                                                                          69
                                                                                                                                                                           81
                                                                                                                                                                                             ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                           RESULT
Q53154
         ð
                           밁
                                           QΥ
                                                               В
                                                                              Ş
                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                     Matches
                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                     01-NOV-1996 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
(CLONE PRB FISF 1), 5' E
                                                                                                                                                EMBL; M99391; AAA73386.1; NON_TER 154 154
                                                                                                                                                                                                                               Rickettsiaceae;
NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                   Q53154
                                                                                                                                       SEQUENCE
                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                 132 KSYGNACROPD
                                                                                                                                                                                                                                                                                                                                                                                 142 EIYGTACRQPD
120 QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR
                                                                                                                                                                                                                                                                                                                                     æ
                           65
                                             64
                                                                                                                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                       17
                                                                Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 52; Conserv
                                                                                                            Similarity
                                                                                                                                       154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14801 MW;
                                                                                                                                      15849 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31.0%;
                                                                                                          30.1%;
```

```
MEDLINE-93084757; PubMed=1452660; Baird R.W., Lloyd M., Stenos J., Ross B "Characterization and comparison of Ausigroup rickettslae."; J. Clin. Microbiol. 30:2896-2902(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20575219; PubMed=11133455; Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K., Bertrand D., Hurst G.D.D., Majerus M.E.N.; "Incidence of male-killing Rickettsia spp. (alpha-Proteobacteria) the Ten-Spot Ladybird Beetle Adalia decempunctata L. (Coleoptera:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; alpha subdivision; Rickettslaceae; Rickettsleae; Rickettsia. NCBI_TaxID-120393;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Coccinellidae).";
Appl. Environ. Microbiol. 67:270-277(2001).
EMBL; AJ269516; CAB96381.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 KDA ANTIGEN (FRAGMENT).
male-killing Rickettsia from Adalia decempunctata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26 SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                      9 SSLIIISV----FLVGC---AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNSTG
                                                                                GLIGSKIGQSMDQQDK----IKLNQSLEKYKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                           SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 01, Created)
. 01, Last sequence update)
. 08, Last annotation updat
END CDS (FRAGMENT).
                                                                                                                                                                                                                 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22; Mismatches
                                                                                                                                                                                                                 Score 252; DB 2; 1
Pred. No. 3.3e-15;
9; Mismatches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 259.5; DB 2
Pred. No. 6.3e-16;
                                                                                                                                                                                                                                                                                                      F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C825472F16A56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                           Ross B.C., Stewart R.S., Dwy of Australian human spotted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsiales;
                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Dwyer B.;
                                                                                                                                                                                                                   14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                  fever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141
                                          124
                                                                                                                                64
                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
```

2

4;

В

125

QD---

--CRVYTQTVVIGGKQQKAYGNACRQPDGQ 154

```
RESULT 10
Q9F0Q1
ID Q9F0Q
AC Q9F0Q
DT 01-MA
DT 01-MA
DT 17-KN
DOS Ricke
QC STRAI
RA RAOUL
RT "A NOUL
RT "A NOUL
RT "A CLUBMI
RA ROUX
RL SUBMI
RA ROUX
RL SUBMI
RA SUB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
Q9F909
ID Q0
AC Q0
DT Q1
DT Q1
DT Q1
OC Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                          Matches ,
                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γQ
                                                                                                           O9F0Q1 PRELIMINARY;
O9F0Q1;
O9F0Q1;
O1-MAR-2001 (TIEMBLITE1 16, C1)
O1-MAR-2001 (TIEMBLITE1 16, L4)
O1-MAR-2001 (TIEMBLITE1 16, L4)
O1-MAR-2001 (TIEMBLITE1 16, L4)
O1-MAR-2001 (TIEMBLITE1)
O1-MAR-2001 (TIEMBLITE1)
O1-MAR-2001 (TIEMBLITENT)
O1-MAR-2001 (TIEMBLITENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                            Raoult D.;
"A new SFG rickettsia isolated from fleas.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-CALIFORNIA 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia sp. California 2.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=147259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 QERRQQYCREFQQKAMIAGQKQEIYGTACRQP 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9F9Q9
Q9F9Q9;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF181036; AAG09427.1; - NON_TER 151 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nilsson K., Pahlson C.;
"Novel peptide diagnostic reagent and kit for detection rickettsiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR-2001 (TrEMBLrel. 16, Last se
01-MAR-2001 (TrEMBLrel. 16, Last ar
OUTER MEMBRANE PROTEIN (FRAGMENT)
RICKETTSIA helvetlesia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                        l Similarity
48; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNSTGOYCREYTOTVVIGGKOOKAYGNACROP 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AVLGGQIVAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GLIGSKIGOSMDOQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151 AA; 15621 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Tremblrel 16, I
(Tremblrel 16, I
(Tremblrel 16, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29.5%;
                             22;
                  Score 237.5;
Pred. No. 5.4e
22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 247; DB 2;
Pred. No. 9e-15;
26; Mismatches 5
                                                                                                        23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B77407B9C71E4B39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131 AA
                                        .4e-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e update)
ion update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57;
                                                          Length 131;
          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
        9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26
```

```
Q9L522
ID Q9
AC Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
CS R1
OC Ba
OC R1
OC BA
OC R1
CS R2
CS R3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 37.8
Matches 48; Conservative
                                                                                                                                                                                                              O91522 PRELIMINARY; PRT; 131 AA.
O91522;
O1-OCT-2000 (TrEMBLrel. 15, Created)
O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
O7 KDA SURFACE ANTIGEN (FRAGMENT).
  SEQUENCE FROM N.A.
STRAIN-DABELOOR;
MEDLINE-21091941; PubMed-11157215;
Simser J.A., Palmer A.T., Munderlo
                                                                                                                                     Rickettsia peacockii.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=47589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125 KAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142 EIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            beetle (Adalia bipunctata),",
J. Bacteriol. 176:388-394(1994).
EMBL; U04162; AAA19235.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-94117373; PubMed-8288533;
Werren J.H., Hurst G.D., Zhang W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1996 (TrEMBLre1. 01,
01-NOV-1998 (TrEMBLre1. 08,
17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Majerus M.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82 LNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREEQQKAMIAGOKQ 141
::|| :| | :| |::|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 NKOGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26 SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsial relative associated with male killing in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            125 KAYGNAC 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142 EIYGTAC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NKOGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLGGQTGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 (Tremblrel. 01, 06 (Tremblrel. 01, 18 (Tremblrel. 08, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.4%; 37.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13344 MW;
     Munderloh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 237.5;
Pred. No. 5.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlDCF71050DF52DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
  U.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Breeuwer J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131
Kurtti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .4e-14;
                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA
                                                                                                                                                                              Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48;
Т.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stouthamer R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the ladybird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ?
```

```
RESULT
O3 12008
ID O3
AC O3
DT O0
DT
RESULT
Q985G4
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
OF MI
GN MI
GN Rh
                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SO FT DR RT
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                 Q985G4;
01-OCT-2001
01-OCT-2001
01-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AE NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appl. En
EMBL; AF
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=LA COPITA;

MEDLINE=98367252; PubMed=9701930;

Billings A.N., Yu X.J., Teel P.D., Walker D.H.;

"Detection of a spotted fever group rickettsia
(Acari: Ixodidae) in south Texas.";

J. Med. Entomol. 35:474-478(1998).

EMBL; AF033499; AAB88943.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             031208
031208;
                       MLR7687
MLR7687.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JAN-1998 (TREMBLRel. 05, Last sequence upd 01-DEC-2001 (TREMBLRel. 19, Last annotation u 17 KDA ANTIGEN (FRAGMENT).

Rickettsia sp. 'La Copita'.

Rackettsia sp. 'La Copita'.

Rackettsiaceae; Rickettsieae; Rickettsia.

RICKETTA; Proteobacteria; alpha subdivision; Rickettsia.
                                                                                                                                                           Q985G4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1998
  Rhizobium loti (Mesorhizobium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                         55
                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                    43 GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           solation of a spotted fever group rickettsia, Rickettsia peacockii,
a Rocky Mountain wood tick, Dermacentor andersoni, cell line.";
pl. Environ. Microbiol. 67:546-552(2001).
BL; AF260571; AAF69012.1; -.
                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                    NPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPD 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GQLVGVGV-----GALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLGAVLCGQIGAGMDEQDRRLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 Similarity 41.2
47; Conservative
                                              PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                 1 (TrEMBLrel. 18,
1 (TrEMBLrel. 18,
1 (TrEMBLrel. 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105
105 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel. 05, Created)
(TrEMBLrel. 05, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105
11236 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
13413 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                26.7%; Score 223.5; DB 2;
41.2%; Pred. No. 7.4e-13;
tive 17; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22;
                                                                   Last sequence update)
Last annotation updat
                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 236.5; DB 2
Pred. No. 6.6e-14;
2; Mismatches 48
                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
  loti)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7BDD35104701D4FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            228C020550CAA9D0 CRC64;
                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105
                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Amblyomma cajennense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
```

```
RESULT 15
Q9AGC7
                     2
                                                 В
                                                                        Ş
                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                        01-JUN-2001
01-JUN-2001
01-JUN-2001
17 KDA ANTIGI
                                                                                                                                                                                       PASPALIARIS V., Liedtke B., Vitetta L., Whiting J.L.; Paspaliaris V., Liedtke B., Vitetta L., Whiting J.L.; "Rickettsia typhus and Rickettsia felis rickettsioses in Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases. EMBL; AF336794; AAKZ1272.1; -.
                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; alpha subdivision;
Rickettslaceae; Rickettsleae; Rickettsla.
NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                           Q9AGC7;
                                                                                                                                                                                                                                                                                                                                                                                       Q9AGC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete proteome. SEQUENCE 199 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Complete genome structure of the nitrogen-fixing mesorhizobium loti.", DNA Res. 7:331-338(2000).
EMBL; AP003012; BAB54098.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasa Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimot Takeuchi C., Yamada M., Tabata S.;
                                                                                                                                                                                                                                                                                                            Rickettsia typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-MAFF303099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; alpha subdivision; Phyllobacteriaceae; Mesorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21082930; PubMed=11214968;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=381;
                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                        152 GEVVPAQPY-RVGSQD-----CRQYTQTVFTGGAGVTARGTACRNADGSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 YSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRW
63
                        99
                                                                          43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                 ω
                                                                                                                                                                                                                                                                                                                         KDA ANTIGEN (FRAGMENT).
                                                                        GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDTGNS
NPDNGNHGYVTPNKT
                      NPDTGNSYSVEPVRT
                                                 GSQFGHGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLVELTSQRALESAPSGSNIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGKVTKSIISAMDGGLIGGSIGNGLSDEEKRSALEAEYKALEYTTSGQKVAWKGDQASHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
35; Conserv
                                                                                                   Similarity 29; Conserv
                                                                                                                                                      77 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199 AA;
                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 17, Last annotation updat
                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                     7955 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20517 MW;
                                                                                                               16.7%;
38.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17.18;
77
                        113
                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15;
                                                                                                               Score 140;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 143;
Pred. No. 2.
                                                                                                                                                     B1E447C037263918 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98E6F20A734637AA CRC64;
                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 16;
2.9e-05;
nes 50;
                                                                                                               DB 2;
..6e-05;
                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kato T., Sasan
ima K., Kimura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rhizobiaceae
                                                                                                   29;
                                                                                                                           Length 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             symbiotic bacterium
                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matsuno A.,
Sugimoto M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sasamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                    Australia.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                   4;
                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105
                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ψ
```

cch completed: October time: 19.1865 secs

27,

2002,

11:10:22

۲.

THIS PAGE BLANK (USPTO)

```
Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
     33310
33210
33210
33210
33210
33210
33210
33210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                            296
294.5
284.5
276
276
263
261
261
258
157
113.5
105.5
105.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
     seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-677-374-2
836
1 MNRGCLQGSSLIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          October 27, 2002, 11:00:36 ; Search time 6.15544 Seconds (without alignments) 1019.028 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105224 seqs, 38719550 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
     Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MNRGCLQGSSLIIISVFLVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0.5
                17KD_RICJA
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICAN
17KD_RICMA
17KB_SALTY
17KB_SALTY
17KB_SALTY
17KB_SALTY
17KB_SALTY
17KB_CAMAL

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .....IYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Compugen Ltd
P22882 rickettsia
p50928 rickettsia
p50928 rickettsia
p50929 rickettsia
p50931 rickettsia
p50931 rickettsia
p50931 rickettsia
p50939 rickettsia
p50939 rickettsia
p50939 rickettsia
p50939 rickettsia
p2697 rickettsia
p2772 salmonella
p27723 salmonella
p27723 salmonella
p27723 salmonella
p27723 salmonella
p27723 salmonella
p27723 rattus norv
p33476 bluettongue
p66867 bos taurus
p33476 bluettongue
p66867 aquifex aeo
p13135 bos taurus
p46724 mycobacteri
p34309 caenorhabdi
p06813 oryctolagus
p19482 bos taurus
p15999 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P16624 rickettsia
Q52764 rickettsia
P05372 rickettsia
P22882 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                6 bluetongue
7 aquifex aeo
5 bos taurus
7 saccharomyc
7 nephila cla
4 mycobacteri
9 caenorhabdi
3 oryctolagus
2 bos taurus
                                                                                                                                                                                                            5 haemophilus
6 escherichia
4 bos taurus
4 bacillus su
1 bacillus su
1 salmonella
3 escherichia
                                                                                                                                                                                                                                                                                                                         4 yersinia en
1 escherichia
9 salmonella
                                                                                                                                                                              salmonella rattus norv
                                                                                                                                                               candida alb
```

Query Match
Best Local Similarity
Matches 61; Conserv

Conservative

35.4%; Score 296; DB 1; I 38.1%; Pred. NO. 9.9e-19; 38.1%; Mismatches 55;

Length 159; Indels

14;

Gaps

4

CC	3000000000000000	RA RA RA	R R R R R R R R R R R R R R R R R R R	RESU 17KD ID AC DT DT	·
or send	mitoch Nature -i- SUI an This SY between the Eu use by modific	gen J. [2] SEQ STR MED And Sic Eri	Ric Bac Ric Ric SEQ STRR And	SULT 1 17KD_ 17KD_ 91662 01-AU 01-AU 16-OC	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
1.a 428 428 339 nem	396: 3CELLICHOR Chor Thor VISS- Copeas	gene."; J. Bacteriol. 171:51 [2] SEQUENCE FROM N.A. SEQUENCE FROM N.A. STRAIN-MADRID E; MEDLINE-99039499; Pu Andersson S.G.E., Zo Anderstiz-Ponten T., Eriksson AS., Wink "The genome sequence	Rickettsia prowaz Bacteria; Proteob Rickettsiaceae; R Rickettsiaceae; R Rickettsiaceae; R RICHITAXID=782; [1] SEQUENCE FROM N.A SEQUENCE FROM DE; MEDLINE=89359171; Anderson B.E., Tz Comparative sequ	PR D_RICPR 624; AUG-1990 AUG-1991 OCT-2001	79.5 79.78.5 78.5 78.5 77.5 77.7 77 77 77 77
email to licent 2; AAA26378.1; 2; AAA26378.1; 273; CAA15258.1; 2033971. 00013; PROKAR_I 00013; PROKAR_I 1	33-140(LAR LOC Probabl Probabl ROT ent Swiss Bioinf -profit this s uires a	71: .A. ., 9; 9; win	Ri Ri Ri	STAND (Rel. 15 (Rel. 19 (Rel. 40 ace antig	00000000000000000000000000000000000000
t to licens haz6378.1; cAa15258.; g71. s; PROKAR I Lipoprotei 19 159 159 20 ha; 16672	ATION: At e). Ty is cop Institute ormatics institutetatement license	0 de 1	azekii. obacteria; Rickettsi .A. 1; PubMed- Tzianabos	ARD , C , L en	05000000000000000000000000000000000000
; ALT: .1;LIPO .ein;	: At cop cop tute fics fics fics	201(=982 dipodipodipodipodipodipodipodipodipodipo	al eae eae T.;	RD; Created; Last sec Last and	44444444444
Sib.ch). Q. TEIN; 1. igen; Signal; Complete igen; Signal; Complete CYL DIGLYCERIDE (PROBAB 33D404B65EEB071 CRC64;	d to the outer membra t it is produced thr toinformatics and th tute. There are no as long as its cont t removed. Usage by the ch (See http://www.	89). 93; C.M., Andersson J.O., C.M., Podowski R.M., Kurland C.G.; tsla prowazekii and th	lpha subdivision; Rickettsiales; e; Rickettsia. 68201; sis of a genus-common rickettsial	;; PRT; 159 AA. reated) ast sequence update) ast annotation update) precursor.	ATPA_HUMAN P ATPO_BOVIN P ATPA_MOUSE P YIAD_ECOLI CANS_MOUSE P CSP_PLABR CSP_PLABA ATPA_ANASP ATPA_THIFE CYSH_ECOLI P CANS_MOUSE P ATPA_THIFE CYSH_ECOLI P ATPA_THIFE CYSH_ECOLI P ALIGNMENTS
. ote	rane by a rough a the EMBL restric ntent is by and fi	Naeslund e origin	les;		P25705 P15483 P19483 P19483 Q03265 P37665 O88456 O88456 P14593 P14593 P12405 P17854
ome.	ne by a lipid ough a collaboration e EMBL outstation - restrictions on its ent is in no way and for commercial isb-sib.ch/announce/	Of P.K.	antigen		homo sapien homo sapien bos taurus musculu marek's dis escherichia mus musculu plasmodium plasmodium plasmodium phacanabaena sp thiobacillu escherichia

63

```
120 QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS
                                                                                                                                                                                                                                                                65 AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; D16515; BAA03965.1;
PROSITE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long as its content is in no way entified and this statement is not removed. Usage by and for commercial entifies requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboratio between the Swiss Institute of Bioinformatics and the EMBL outstation use by non-profit institutions as long as its content is in no was a superior of the swiss in the content of the content is in no was a superior of the content of the content is in no was a superior of the content of the content is in no was a superior of the content of the content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=95229950; PubMed=7714214; Furuya Y., Katayama T., Yoshida Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 01-NOV-1997 (Rel. 01-NOV-1997 (Rel. 17 kDa surface anti-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia japonica.
                                                                                                                                                                                        RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                           SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGTGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                              SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             membrane; Lipoprotein;
L 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QERROQYCREFQOKAMIAGOKQEIYGTACRQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RNSAGQYCREYTQTVIIGGKQQKTYGNACROPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AVLGGQIGASHDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SKIMITALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΑĄ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       obacteria; alpha subdivision; Rickettsiales;
Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16554 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35.2%; Score 294;
38.1%; Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence up
Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Antigen; Signal.
BY SIMILARITY:
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
7; CDDCE7CEBDCD6B41 CRC64;
                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                       159
                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; I
1.5e-18;
hes 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                            159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clinical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                            EMBL; M28479; AAA26379.1;
EMBL; M28480; AAA26378.1;
EMBL; AE008675; AAL03825.1;
EMBL; M16486; AAA26381.1;
EMBL; J03371; NOT_ANNOTATED_CDS.
PIR; A25972; A25972.
PIR; A31836; A31836.
PIR; B33971; B33971.
PIR; B33971; B33971.
PIR; B33971; B33971.
                                                           CHAIN
LIPID
CONFLICT
                                                                                                                              SIGNAL
                                                                                                                                                Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through; between the Swiss Institute of Bioinformatics and the EMD 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-89008059, PubMed-3139629;
Anderson B.E., Baumstark B.R., Bellini W.J.,
"Expression of the gene encoding the 17-kilodalton antigen
Rickettsia rickettsii: transcription and posttranslational
modification.",
J. Bacteriol. 170:4493-4500(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-30 FROM N.A. SPECIES=R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Sequence analysis of the 17-kilodalton-antigen genericketts::";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-8722152; PubMed-3108232;
Anderson B.E., Regnery R.L., Carlone G.M., Tzianabos Fu Z.Y., Bellini W.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES=R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPECIES-R.conorii; STRAIN-Malish 7,
MEDLINE-21442074; PubMed-11557893;
Ogata H., Audic S., Renesto-Audiffren P., Fournier P.-E.,
Samson D., Roux V., Cossart P., Weissenbach J., Claverie J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1988 (Rel. 09, Created)
01-AUG-1990 (Rel. 15, Last sequence
01-MAR-2002 (Rel. 41, Last annotati
7 kDa surface antigen precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPECIES=R. conorii, and R.rickettsii;
MEDLINE=89359171; PubMed=2768201;
Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mechanisms of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteriol. 169:2385-2390(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteriol. 170:4493-4500(1988).
SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia conorii, and Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteriol. 171:5199-5201(1989).
                                1
20
20
20
146
153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            isms of evolution in Rickettsia conorii and R. prowazekii.";
293:2093-2098(2001).
                           Lipoprotein;
1 19
0 159
0 20
146
146
                                                                                                                         PROKAR_LIPOPROTEIN; ipoprotein; Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09, Created)
15, Last sequence update)
41, Last annotation update)
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
N -> D (IN REF. 3).
G -> E (IN REF. 3).
                                                                                            1.
Signal; Complete
                                                                                                                                                                                                                                                                                                                                                                                              noved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genus-common rickettsial antigen
                                                                                                             proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Т., McDade J.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Barbe V.,
```

17KD_RICJA

17KD_RICJA

ckettsiaceae;

kDa surface

B Š Дb

120 120 Qy

65 64 В Š

G

9

RESULT 3
17KD_RICCN
17KD_RICCN

В δõ В Ş Дb δÃ

120

64

σı 9 Matches Query Match Best Local

Local

CHAIN LIPID

20 20

SEQUENCE

```
ALD DOCUMENT TO THE CONTROL OF THE C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                  밁
                                                                                                          Ş
                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                       Š
                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
17KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Best L
                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 55; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a c
between the Swiss Institute of Bioinformatics and the EMBL
the European Bioinformatics Institute. There are no restrict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-89359171; PubMed-2768201;
Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-AUG-1991 (Rel. 19,
01-AUG-1991 (Rel. 19,
01-OCT-1996 (Rel. 34,
17 kDa surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17KD_RICTY P22882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia typhi.
Bacteria: Proteobacteria:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
R
R
                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                        Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; C33971;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                        LIPID
                         142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                      87
                                                                                                                   82
                                                                                                                                                                27
                                                                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriol. 171:5199-5201(1989).
- SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                          SRQEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AVIGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
EIYGTACRQPDGRWQVIS
                                                                                                LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 141
                                                                                                                                                           NKQGTGTLLGGAGGALLGSQFGHGKGQLVGVGVGALLGAVLGGQIGASLDEQDRKLLELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSLITISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                      SQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M28481; AAA26377.1;
                                                                                                                                                                                                                                                                                                                                                                 E; PSO0013; PROKAR_LIPOPROTEIN; 1
membrane; Lipoprotein; Antigen; S
1
1
20
159
17 KDA SUP
N-ACYL DIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                     20
20
159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          159
                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŋ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsieae;
                                                                                                                                                                                                                                                                                                                                              20 N
16549 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16581 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.0%;
                                                                                                                                                                                                                                                                          34.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                     25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 293; DB 1;
Pred. No. 1.8e-18;
Pred. No. 1.8e-18;
                                                                                                                                                                                                                                                  Score 284.5; DB 1;
Pred. No. 9.5e-18;
5; Mismatches 49;
                                                                                                                                                                                                                                                                                                                                          17 KDA SURFACE ANTIGEN N-ACYL DIGLYCERIDE (PRO ): 08973E2648FD8CD8 CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genus-common rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                      1.
Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 159
                                                                                                                                                                                                                                                                                                                                              (PROBABLE)
CRC64;
                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                  159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                  Gaps
                                                                      141
                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A THE TERM OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
17KD_RICAU
    RR POCCOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                       17KD_RICAM
                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                     P50927;
01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
LIPID
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Outer membrane; SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Exthe European Bioinformatics Institute. There are no restruce by non-profit institutions as long as its content use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Baird R.W., Ross B., Submitted (OCT-1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsiaceae;
NCBI_TaxID=787;
  SEQUENCE FROM N.A.
STRAIN-MO 85-1084;
                                                                                         Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P50928;
                                                                                                                                      Rickettsia amblyommii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia australis
                                                                  NCBI_TaxID=33989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M74042; AAA26394.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                               17KD_RICAM
                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L7KD_RICAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          142
                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                   kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                                                                                                                                                                                                                              ----GYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                           QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTYRNSN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIMIIALAASMLQACNSPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSLITISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                     surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       surface antigen precursor (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
59; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ps00013; prokak_Lirc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154 AA;
                                                                                                                                                                                                   (Rel. 34, Last sequence update)
(Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                  (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Rel. 34, Last sequence update) (Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                   antigen
                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  >154
                                                                                                                                                                                                                                                  34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 ·
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dwyer B.; to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          159
                                                                                         alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 276; DB 1;
Pred. No. 4.9e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antigen; Signal.
BY SIMILARITY.
17 KDA SURFACE ANTIGEN
N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E3AA833346FAC320 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                   (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to the
                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                  Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                   Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
```

14;

Gaps

4.

63 64

уd

a lipid

EMBL

outstation

9

for

a collaboration

Stothard D.R.,

```
RESULT 7
17KD_RICPA
                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
EMBL; U17008; AAA82040.1; -.
PROSITE; PS00013; PROKAR LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal.
19
BY SIMILARITY.
154
17 KDA SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way or send an email to license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last seque)
01-0CT-1996 (Rel. 34, Last seque)
17 kDa surface antigen precurso;
                                                                                                                                                    STRAIN-MACULATUM,
Pretzman C.I., Stothard D.R., Ralph D., Clark J.B., Fuerst P.A.,
Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
-I- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                    Alckettsia parkeri.
Rickettsia parkeri.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local ;
                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                        7KD_RICPA
                                                                                                                                                                                                                                                                                                                                                                          120 RNSTGOYCREYTOTVVIGGKOOKAYGNACROPDGO 154
                                                                                                                                                                                                                                                                                                                                                                                             120 QERROQYCREFOQKAMIAGOKQEIYGTACRQPDGR 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation use by non-profit institute. There are no restrictions on its entitied and this statement is not removed. Usage by and for commercial or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABL: U11013; AAB07704.1; -.

ROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.

JUCTATIN 1 19 BY SIMILARITY.

20 >154 17 KDA SURFACE ANTIGEN.

20 N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                              5 SKIMIIALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.

-! SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                           AVLGGQVGAGNDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                    GLIGSKIGOSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                          Last sequence update;
Last annotation update;
n precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.5%; Score 263; DB 1; Le
36.8%; Pred. No. 6.4e-16;
Mismatches 57;
                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                             154 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4,
                  δÃ
                                       Ъ
                                                         Qγ
                                                                              DЪ
                                                                                                Qγ
                                                                                                                                                            Query Match
Best Local s
                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SQ
SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIPID
NON_TER
```

```
Вb
                                                                                                                                                                                                                      120 RNSTGOYCREYTQTVVIGGKOOKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its mon-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                        65 AVLGGQIGAGNDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY-----
                                                                 64 GLIGSKIGOSMDQODK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYORVNK 119
                                                                                                                  9 SSLIIISV---FLYGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C., Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17KD_RICRH STANDARD; PRT; 154 AA.
P50931; PRT996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsia_rhipicephali.
                         QERRQOYCREFOOKAMIAGOKQEIYGTACROPDGR 154
                                                                                                 SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120 RNSTGOYCREYTOTVVIGGKOOKAYGNACLQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120 QERROOYCREFOOKAMIAGOKQEIYGTACROPDGR 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 AVLGGQIGAGMDEODRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----- 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 SKIMVÍALATSMLQAČNGÞGGMNKÒGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                             Similarity
                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                   15895 MW; OCF85AD5D96DFEFB CRC64;
                                                                                                                                                       31.2%; Score 261; DB 1; Length 154; 36.1%; Pred. No. 9.5e-16; tive 28; Mismatches 57; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15897 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 261; DB 1;
Pred. No. 9.5e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5D06F45F9DBD5EEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                               (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 154;
                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
```

```
RESULT 10
17KD_RICCA
ID 17KD_R
AC P29697
DT 01-APR
DT 01-APR
DT 01-APR
DT 17 APR
OMP.
OS R1Cket
OC R1cket
OX NCBI_T
RN [1]
RP SEQUEN
RX MEDLIN
                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
17KD_RICMO
                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                              P29697;
01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-OHIO 83-441;
Stothard D.R., Ralph
Submitted (DEC-1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17KD_RICMO STANDARD; PRT; 154 AA. p50929; 01-0CT-1996 (Rel. 34, Created) 01-0CT-1996 (Rel. 34, Last sequence update) 01-0CT-1996 (Rel. 34, Last annotation update) 17 kba surface antiqen precursor (Francocci,
                                                       Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
  SEQUENCE FROM N.A. MEDLINE-92108069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
                                                                                  Rickettsia
                                                                                                                                                                              17KD_RICCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia montana
                                          NCBI_TaxID=788;
                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                6
4
                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                          u
                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - Buropean Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anchor (Probable).
                                                                                                                                                                                                                                                 RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                     SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                            QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGR 154
                                                                                                                                                                                                                                                                                                       AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                               GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                           SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U11017; AAB07705.1;
                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PS00013; PROKAR_LIPOPROTEIN;
                                                                                   canada.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
20
                                                                                                           antigen
                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               >154
20
    PubMed-1729713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15881 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                           30.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.A., Clark J.B., Fuerst to the EMBL/GenBank/DDBJ
                                                                                                           (Fragment).
                                                       alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                                                                                                                                                                                                                                                                                                                                                           Score 258; DB 1; ...
Pred. No. 1.7e-15;
""" matches 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antigen; Signal.
BY SIMILARITY.
17 KDA SURFACE ANTIGEN
N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A09C53B8769E31DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.
Signal.
                                                                                                                          update)
                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no rest
                                                                                                                                                                                                                                                  154
                                                                     Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : P.A., Pret
] databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pretzman
                                                                                                                                                                                                                                                                                                                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ი:
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                4
```

```
RESULT 1.
PCP_YEREN
ID PCP_YEREN
P31484;
P31484;
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                 use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                               J. Bacteriol. 174:1029-1035(1992).
-!- FUNCTION: FACILITATES FERRIOXAMINE UPTAKE
                                                                                                                                                                                                                                                                                                                       "A lipoprotein of Yersinia enterocolitica uptake in Escherichia coli.";
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. STRAIN-ATCC 51872 / WA-C / SEROTYPE 0:8; MEDLINE-92121089; PubMed-1732192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M82879; -; NOT_ANNOTATED_CDS.
InterPro; IPR000437; Prok_lipoprot.
PROSITE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Ethe European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content use by non-profit institutions are no rest use by non-profit institutions as long as its content use by non-profit institutions are nowed. Usage by an modified and this statement is not removed. Usage by an institution of the profit in the produced by an institution of the profit in the produced by an institution of the profit in the produced by an institute of the profit in the profit in the produced by an institution of the profit in the profit in the produced by an institution of the profit in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1993
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUL-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       typhus-like rickettsia found in cat fleas."; Proc. Natl. Acad. Sci. U.S.A. 89:43-46(1992)
                                                                                                                 the European Bioinformatics Institute.
                                                                                                                                                                                                                        -!- SIMILARITY: TO
                                                                                                                                                                                                                                                              -!- SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                               Baeumler A.J., Hantke K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yersinia enterocolitica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCP OR PCPY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yersinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Genetic characterization and transovarial transmission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schmidtmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Azad A.F., Sacci J.B. Jr.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                   H.INFLUENZAE PCP.
                                                                                                                                                                                                                                           anchor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPDNGNYGYVTPSKTYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSQFGKGKGQLIGVGAGALLGAILGNQIGAGMDEQDRRLAELTSQRALETTPSGTSIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NPDTGNSYSVEPVRTYQ
x60448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .T., Carl M.
CAA42977.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26, Created)
26, Last sequence 37, Last annotations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
8372 MW;
                                                                                                                                                                                                                    E.COLI AND S. TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18.8%;
40.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                              Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pcp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nelson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 157;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AD289A48EAB19E0E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W.M., Dasch
                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no restrictions
                                                                                                                   There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                              facilitates
                                                                                                                                                                                                                                                              outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    outer membrane by a lipid
                                                                                                                                                                                                                        SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
                                                                                                                                    and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 80
                                                                                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                        TO
                                                                                                               restrictions
                                                        isb-sib
                                                                                                                                                                                                                                                                                                                                                ferrioxamine
                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL
                                                                                                                                                                                                                                                                D
                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                          collaboration
                                                                                                                                        outstation
                                                          ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                             commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲
```

SQ PT

CHAIN LIPID

18 18

SEQUENCE

PIR; S23787; S23787.
HSSP; P00778; 1P04
PROSITE; P500013; PROKAR_LIPOPROTEIN; 1
Outer membrane; Lipoprotein; Signal.
SIGNAL 1 17
POTENTIAL.

```
A ALDA H. Baba T. Fujita K. Hayashi K. Inada T. Isono K. Alba H. Rasai H. Kashimoto K. Kimura S. Kitakawa M. Toh T. Kasai H. Kashimoto K. Kimura S. Kitakawa M. Makino K. Miki T. Mizobuchi K. Mori H. Mori T. Ra Motomura K. Nakade S. Nakamura Y. Mizobuchi K. Mori H. Mori T. A Goshima T. Saito N. Sanpei G. Seki Y. Sivasundaram S. Takeda J. Takemoto K. Takeuchi Y. Wada C. RA Yamamoto Y. Horiuchi T. Takenoto K. Takeuchi Y. Wada C. RA 570-kb DNA sequence of the Escherichia coli K-12 genome RL DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
SLYB_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                             SLYB_ECOLI STANDARD; PRT; 155 AA. P55741; P76183; O1-NOV-1997 (Rel. 35, Created) O1-NOV-1997 (Rel. 35, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Outer membrane lipoprotein slyB precursor SLYB OR B1641 OR Z2655 OR ECS2350. Escherichia coli, and Escherichia coli O157:H7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
Qy
                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                         STRAIN-K12 / MG1655;
MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V. Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                        Science
                                                                                                                                                                                                                                                                                               "SlyA, a regulatory protein from Salmonella typhimurium, induces Mol. Gen. Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE=96133688; PubMed=8544813;
Ludwig A., Tengel C., Bauer S., Bubert A., Benz R., Mollenkopf H.-J.,
Goebel W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=562,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; gamma
                                                                                                                                                                                complete genome sequence of Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83 ~-NOSLEKVKAGQVTRWRNPDTGNSYSVEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67 GAVLGGFLGNTVGGGTGRSLATAAGAVAGGNAGQGVQGANNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VQKQGPTRFSVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AVAIAAVTLTGCANNNTLSGDVFSASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVNGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SLIIISVFLVGGAQN-----FSRQE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                     83334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĀΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155
OUTER MEMBRANE LIPOPROTEIN PCP.
18
N-ACYL DIGLYCERIDE (POTENTIAL)
15362 MW; 8AD6BE213ZE849FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.6%;
24.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                        subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 113.5;
Pred. No. 0.(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.0041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
```

```
RESULT 13
SLYB_SALTY
ID SLYB_S;
AC Q53549
DT 01-NOV
DT 01-NOV
DT 01-MAR
DE Outer;
                                                                                                                                                          DЬ
                                                                                                                                                                                 δÃ
                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                        ρy
                         01-NOV-1997 (Rel. 3
01-NOV-1997 (Rel. 3
01-MAR-2002 (Rel. 4
                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                   SLYB_SALTY
                                                                                                                                                                                                                                                                                                                                             ECOGÉNE; EGI3409; SIYB.

PROSTITE; PS00013; PROKAR LIPOPROTEIN; 1
OUTET membrane; Lipoprotein; Signal; Complete proteome.
CHAIN
CHAIN
18
15
LIPID
18
18
18
19
N-ACYL DIGLYCERIDE.
SEQUENCE
155 AA; 15602 MW; 543EBBA4089A5FA3 CRC64;
                                                                                                                                                       119
                                                                                                                                                                98 RNPDTGNSYSVEPVRTYQRYNKQER 122
                                                                                                                                                                                                                              10 MVGLSEVECVNNDTLSGDVYTASEAKQVQNVSYGTTVNVRPVQIQGGDDSNVIGAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL: D90807; BAA15402.1;
EMBL: AB005387; AAG56330.1;
EMBL: AP002558; BAB35773.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                            70
                                                                                                                                                                                                                                                    13 IISVFLYGCAQN------FSRQE------VGAATGAV 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE000259; AAC74713.1; -. EMBL; D90807; BAA15402.1; -.
                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-0157:H7 ....

STRAIN-0157:H7 ....

MEDLINE-21156231; PubMed-11258796;

Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoya, Inda T., Takami H., Honda T., Sasakawa C., Ogasawata M., Tobe T., Kuhara S., Shiba T., Hattori M., Shinagawa H., Gomplete genome sequence of enterohemorrhagic Escherichia coli 20157:H7 and genomic comparison with a laboratory strain K-12.",

DNA Res. 8:11-22(2001).

-i-SUBCELLUIAR LOCATION: Attached to the outer membrane by a 1;
V-1997 (Rel. 35, Created)
V-1997 (Rel. 35, Last sequence update)
R-2002 (Rel. 41, Last annotation update)
membrane lipoprotein slyB precursor.
                                                                                                                                       ---DDGNTIMVVQKQGNTRFSPGQR 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner F.R.; Lin J., Yen G., Schwartz D.C., Nature 409:529-533(2001).
                                                                                                                                                                               LGGFLENTVGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK---
                                                                                                                                                                                                   VGGVAGOLFGKGSGRVAMAIGGAVLGGLIGSKIGOSMDQODKIKLNQSLEKVKAGQVTRW 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. STRAIN=0157:H7 / F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=0157:H7 / EDL933 / ATCC 700927;
MEDLINE=21074935; PubMed=11206551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN=0157:H7 / E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        anchor (Potential).
SIMILARITY: TO S.TYPHIMURIUM SLYB, H.INFLUENZAE PCP AND
Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                        Conservative
                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                    12.6%;
                                                                                                                                                                                                                                                                                                    21;
                                                                         PRT;
                                                                                                                                                                                                                                                                                                                  Pred
                                                                                                                                                                                                                                                                                                                        Score 105.5;
                                                                                                                                                                                                                                                                                                                                          543EB8A4069A5FA3 CRC64;
                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                              No.
                                                                      155
                                                                                                                                                                                                                                                                                                             0.02;
                                                                    AA
                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                         42;
                                                                                                                                                                                                                                                                                                                 Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ishii K., Yokoyama K.,
Tanaka M., Tobe T.,
                                                                                                                                                                                                                                                                                                                                                                                   SLYB
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                4
```

```
밁
                       ş
                                                    Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M. Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ludwig A., Tengel C., Bauer S., B
Goebel W.;
                                                                                                                                                                                                                                                                                                                                                                                                                   "Complete genome sequence of a multiple enterica serovar Typhi CT18.";
Nature 413:848-852(2001).
-I- SUBCELLULAR LOCATION: Attached to th
                                                                                                                                                                                                                                                               the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entitles requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPECIES-S.typhi; STRAIN-CT18; MEDLINE-21534947; PubMed-11677608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPECIES-S.typhimurium; STRAIN-LT2 / SGSC1412 / ATCC MEDILINE-21534948; PubMed-11677609;
                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                    This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., M. Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "SlyA, a regulatory protein from Salmonella haemolytic and pore-forming protein in Esche Mol. Gen. Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPECIES-S.typhimurium; MEDLINE-96133688; Pubm
                                                                                                            SEQUENCE
                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                      EMBL; S80790; AAB35871.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Waterston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Salmonella typhimurium, Salmonella typhi.
                                                                                                                                                                               PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature 413:852-856(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria;
                                                                                                                             J.; $80790; AAB358/1...,

BL; AE008762; AAL20367.1; -.

BL; AL627271; CAD01922.1; -.

CYGene; $G10573; $1yB.

CYGene; $G10573; $PROKAR_LIPOPROTEIN; 1.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.
17
                        GCLQGSSL---
                                                                                                                                                                                                                                                                                                                                  SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
GCVNNDSLSGDVYTASEAKQVQNVTYGTIVNVRPVQIQGGDDSNVIGAIGGAVLGGFLGN
                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STM1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R., Wilson R.K.;
                                                                                                                                                                                                                                                                                                                                                                                                        (Potential)
                                                                                                            155
                                                      Conservative
                                                                                                                          18
18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N.A.
                                                                                                            Α,
                                                                                                                                                                                                                                                                                                                                                                                              ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OR STY1677
                                                                                                                                                                                                                                                                                                                                                                                             E.COLI SLYB, H.INFLUENZAE
                                                                                                            15548 MW;
                                                                                                                          18
                                                                   12.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gamma
                                                      19;
                          -----IIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQ
                                                                Score
Pred.
                                                                                                                          N-ACYL DIGLYCERIDE
                                                                                                                                       OUTER MEMBRANE LIPOPROTEIN
                                                                                                            82FDDCDCBABD55A7 CRC64;
                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bubert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         subdivision; Enterobacteriaceae;
                                                                   105.5;
                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nella typhimurium,
Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             drug resistant
                                                                   .02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clifton S.W., Latreille
                                                                                                                                                                                                                                                                                                                                                                                                                       outer membrane
                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Benz R.,
                                                                                                                                                                                                                                                                                                                                                                                             PCP
                                                    52;
                                                                                ۳.
                                                                                                                                                                  proteome.
                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T., Nhan M.,
                                                                             Length
                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   coli.";
                                                                                                                                                                                                                                                                                              by and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mollenkopf H.-J.,
                                                                                                                                                                                                                                                                                                                                                                                          Y.ENTEROCOLITICA
                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mulvaney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rd D., Wain J
Sebaihia M.,
                                                                                                                                       SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                      by a lipid
                                                                                 155;
                                                                                                                                                                                                                                                                                                           S
                                                      33;
                                                                                                                                                                                                                                                                                                                                                    þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Layman D.,
                                                                                                                                                                                                                                                                                                                                                  collaboration
                                                                                                                                                                                                                                                                                                                                       outstation
                                                                                                                                                                                                                                                                                                           in
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ت.
;
                                                                                                                                                                                                                                                                                                           00
00
01
                                                    w
••
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
    CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

STRAINARD / KW20 / ATCC 51907;

MEDLINE=95350630; PubMed=7542800;

Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J. McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D. Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R. Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Fine C.D., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.

MEDILINE=88115138; PubMed=2828309;

Deich R.A., Metcalf B.J., Finn C.W., Farley J.E., Green B.A.;

Deich R.A., Metcalf B.J., Finn C.W., Farley J.E., Green B.A.;

"Cloning of genes encoding a 15,000-dalton peptidoglycan-associated outer membrane lipoprotein and an antigenically related 15,000-dalto protein from Hammophilus influenzae.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer membrane lipoprotein PCP precursor (15 cross-reacting lipoprotein). PCP OR LPP OR HI1579.
                              CHAIN
LIPID
                                                                                                                                                                                       the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAR-1989
01-NOV-1995
                                                                                                                         EMBL; M18877; EMBL; U32832;
                                                                                                                                                              entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P10325;
                                                       Outer membrane;
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCP_HAEIN
                                                                                                           PIR; B28543; B28543.
                                                                                                                                                                                                                                   between
                                                                                                                                                                                                                                                                                                                               Science
                                                                                                                                                                                                                                                                                                                                          influenzae Rd
                                                                                                                                                                                                                                                                                                                                              "Whole-genome random sequencing influence Rd.":
                                                                                                                                                                                                                                                                                                                                                                    Venter J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                               ence 269:496-512(1995).
SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                       Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                     SIMILARITY: TO E.COLI AND
                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TIMVVQKQGNTRFSAGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYSVEPVRTYORYNKOER 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK
                                                                                   PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Proteobacteria;
1\overline{3}5
155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel.
                                                                                                                         AAA24938.1; -.
AAC23228.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170:489-498(1988).
     ĄΑ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                     Lipoprotein;

    Last sequence update)
    Last annotation update)

                              155
19
      15425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                 Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gamma
      Ĭ,
    OUTER MEMBRANE LIPOPROTEIN
N-ACYL DIGLYCERIDE.
CSLVAEFVF -> VAGRRVRI (IN F
D7880327FCF0C985 CRC64;
                                                                     Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                      S. TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            subdivision; Pasteurellaceae;
                                                                                                                                                                                                                                                                                                               to the outer membrane
                                                                                                                                                                                                                                                                                                                                                      assembly of Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                    Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                   <u>.</u>
                                                                                                                                                                            (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                     There are no restrictions of as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ā
                                                                                                                                                                                                                                                                                      SLYB
                                                                                                                                                                                         Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kDa
                                                                     proteome
                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lipoprotein) (PAL
                                                                                                                                                                                          γģ
                                                                                                                                                                                                                                                                                      oT
                                                                                                                                                                                            and
                                                                                                                                                                                                                                    TEMBL
                                                                                                                                                                                                                                                                                                                 by a
                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ,000-dalton
                                                                                                                                                                                            for
                                                                                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                        ж.с.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u> ب
                                                                                                                                                                                          in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                     o
```

DЪ Ş

30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGOSMDQODKIKL 82

Query Match Best Local S

Matches

Similarity

12.2%;

Conservative

Score 102; DB 1; Length 155; pred. No. 0.04; 1; Indels

0;

Gaps

0;

```
EMBL; AE000211; AAC74194.1; -.
EMBL; D90746; BAA35925.1; -.
EMBL; V00306; -; NOT_ANNOTATED
                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBE outstation use by non-profit institute. There are no restrictions on its entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                        IDENTIFICATION.

MEDLINE-95075659; PubMed-7984428;
BORDGOVSKY M., Rudd K.E., Koonin E.V.;
"Intrinsic and extrinsic approaches for detecting genes in bacterial genome.";
Dacids Res. 22:4756-4767(1994).

"!- SIMILARITY: TO RICKETTSIA 17 kDa SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
YCFJ_ECOLI
ID YCFJ_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=K12;

MEDLINE=81236546; PubMed=6265208;

Young J.G., Rogers B.L., Campbell H.D., Jaworowski A., Shaw D.C.;

"Nucleotide sequence coding for the respiratory NADH dehydrogenase of Escherichia coli, UUG initiation codon.";

Eur. J. Biochem. 116:165-170(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yano M., Horiuchi T.;

A 718-kb DNA sequence of the Escherichia coli K-12 genome corresponding to the 12.7-28.0 min region on the linkage map.";

DNA Res. 3:137-155(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=97061202; PubMed-8905232;
Oshima T., Aiba H., Baba T., Fujita K., Hayashi K., Honjo A.,
Ikemoto K., Inada T., Itoh T., Kajihara M., Kanai K., Kashimoto K.,
Kitagawa M., Makino K., Masuda S., Miki T., Mizobuchi K.,
Mori H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Saito N.
Yano M., Horiuchi T.;
Yano M., Horiuchi T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1-63 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

STRAIN-K12 / MG1655;

MEDLINE-97426617; PubMed=9278503;

Blattner F.R. Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., May B., Shao Y.;

MAU B., Shao Y.;

"The Company of the Company of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P37796; P75951;
01-0CT-1994 (Rel. 30, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
YCFJ OR BIllo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62 VGTLGGGALGGIAGSTIGGGRGQAIAAVVGAIGGAIAGSKIEEKMSQVNGAEL 114
NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
```

```
Search completed: October Job time: 7.15544 secs
                                                  Ъ
                                                                     Qy
                                                                                            Д
                                                                                                             Qγ
                                                                                                                                                                              SOFF
                                                                                                                                          Query Match
Best Local S
                                                                                                                                 Matches
                                                                                                                                                         EcoGene; EG12444; ycfJ.
Hypothetical protein; Transmembr
TRANSMEM 5 25 POT
TRANSMEM 179 AA; 18920 MW; J
                                                 121
                                                                                 31 GAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 90
                                                                   73 GSVLGAVAGGVIGHQFGGGRGKDVATVVGALGGGYAGNQIQGSLQESD-----
                                                  AGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQY 126
                                                                                                                               Similarity
26; Conserv
                                                                                                                        Conservative
                                                                                                                                                        ycfJ.
Pofentane, Complete proteome.
PofenTIAL.
Pofendarenda5609 CRC64;
                              -TYTTTOORCKTVYDKSEKMLGY 142
         27,
                                                                                                                11.8%; Score 99; DB 1; 27.1%; Pred. No. 0.082; tive 12; Mismatches
     2002,
   11:10:51
                                                                                                                                                       BA5EB0DB56D45609 CRC64;
                                                                                                                32;
                                                                                                                                 Length 179;
                                                                                                             Indels
                                                                120
                                                                                                       1;
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                            284.5
284
128.5
125.5
116
113.5
111.5
111.5
111.5
111.5
111.5
110.5
108.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                            101.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-677-374-2
836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       October 27, 2002, 11:05:56; Search time 10.3523 Seconds (without alignments) 1503.668 Million cell updates.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283138 seqs, 96089334 residues
34.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115.0

115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35.0
35.0
35.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MNRGCLQGSSLIIISVFLVG...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000000000
                                      Gapext 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D33971
B33971
A33971
G97860
                                                                        AG0443
164130
AE0644
AD3350
H83636
                                                                                                                                                                                                                                                                    S58234
G87629
                                                                                                                                                                                                                                                                                                                                                                                                            D83169
AI3418
                                                                                                                                                                                          B85771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ij
                                                                                                                                                                                                                                                      AF0289
                                                                                                                                                                                                                                                                                                            D97478
                                                                                                                                                                                                                                                                                                                                AD2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .....IYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compugen Ltd
                                                                                                                                                                                                                          outer membrane lip
conserved hypothet
lipA protein [impo
lipA protein - Rhi
hypothetical prote
probable lipoprote
outer membrane lip
                                                                                                                                                probable outer mem probable outer membrane lip outer membrane lip outer membrane lip
                                                    outer membrane pro
hypothetical prote
ycfJ protein - Esc
                                                                                                                                                                                                                                                                                                                                                                                    conserved hypothet
17K surface antige
conserved hypothet
                hypothetical prote
hypothetical prote
                                                                                                            PAL cross-reacting probable secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                            17K antigen precur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17K surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rickettsial commor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antige
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          common
```

ALIGNMENTS

```
RESULT 1
D33971
                   RESULT
B33971
                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                  Вр
                                                                                                                                                                                                                                                                                                                                          QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Superfamil
C;Keywords:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: The genome sequence of Rickettsia prowazekii and the origin of mitochondria. A;Reference number: A71630; MUID:99039499 A;Accession: B71645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:M28482; NID:g152461
A;Note: the sequence in GenBank entry RIRANT17KC,
R;Andersson, S.G.E.; Zomorodipour, A.; Andersson,
Nature 396, 133-140, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antigen gene.
A;Reference number: A33971; MUID:89359171
A;Accession: D33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Rickettsia prowazekii
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rickettsial common antigen precursor - Rickettsia prowazekii N,Alternate names: 17kD surface antigen; outer membrane protein
                                                                                                                В
                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386
A;Experimental source: strain Madrid E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-159 <AN2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Accession: D33971; B71645
Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: omp; RP833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Anderson, B.E.; Tzianabos, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Superfamily: rickettsial common antigen; Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                120
                                                                                                                                                           120
                                                                                                                                                                                                       65 AVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                      QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS: ||||||:||:||:||:||:||:||
                                                                                                                                                                                                                                                                                             SKIMITALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                        SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                    GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
common antigen precursor -
                                                                                                                                                                                                                                                                                                                                                                                               61;
                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              35.4%;
                                                                                                                                                                                                                                                                                                                                                                                               30;
                                                                                                                                                                                                                                                                                                                                                                                          Score 296; DB 2; I
Pred. No. 6.8e-19;
O; Mismatches 55;
Rickettsia conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     release 109.0, (PID:g152462) omits J.O.; Sicheritz-Ponten, T.; Alsmark
                                                                                                                                                           159
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 159;
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (omp); RP833
                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                               4.
```

```
17k surface antigen precursor [imported] - Rickettsia conorii (strain Malish C;Species: Rickettsia conorii.
C;Date: 30-Sep 2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C;Accession: G97860
R;Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; San
                                                                                                                               RESULT
G97860
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-relerence. C;Superfamily: rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial A;Accession: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Accession: A33971
R; Anderson, B.E.; T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsial common antigen precursor - C:Species: Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Molecule type: DNA;Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:M28479; NID:g152463; PIDN:AAA26379.1; PID:g152464
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Bacteriol. 17, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antigen A;Accession: B33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Anderson, B.E., T
J. Bacteriol. 171,
                                                                                                                                                               120 RNSTGOYCREYTOTVVIGGKQQKAYGNACROPDGQWQVVN 159
                                                                                                                                                                                    120 QERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;Species: Rickettsia conorii
;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 20-Aug-1999
                                                                                                                                                                                                                  65 AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                       5 SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                   9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                                Loca 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 RNSTGOYCREYTOTVVIGGKOOKAYGNAGROPDGOWOVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120 OERROOYCREEQOKAMIAGOKOBIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                       GLIGSKIGOSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-Mar-1990 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64 GLIGSKIGOSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYORVNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AVLGGQTGAGNDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG 63
                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        GB:M28480; NID:9152457; PIDN:AAA26376.1; PID:9152458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                         35.0%; Score 293; DB 2; L
38.1%; Pred. No. 1.2e-18;
70. Mismatches 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 293; DB
Pred. No. 1.2e
29; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-Mar-1990 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
.2e-18;
                                                                                                                                                                                                                                                                                                                                                                   Length 159;
                                                                                                                                                                                                                                                                                                                                       Indels 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen gene
                 Samson,
                                                                                                                                                                                                                                                                                                                                4;
                 D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
              8
```

```
R;Anderson, B.E.; Regnery, R.L.; Carlone, G.M.; Tzianabc
J. Bacteriol. 169, 2385-2390, 1987
A;Title: Sequence analysis of the 17-kilodalton-antigen
A;Reference number: A25972; MUID:87222152
                                                                                                                   RESULT 6
A25972
17K antigen precursor - Rickettsia rickettsii
C; Species: Rickettsia rickettsii
C; Species: Rickettsia rickettsii
C; Accession: A25972
C; Ac
                                                                                                                                                                                                                                                                                                                                                                                                           Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C/Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:M28481; NID:g152459; PIDN:AAA26377.1; PID:g152460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-159 < AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antigen gene.
A;Accession: C33971 A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsial common antigen precursor - Rickettsia typhi
C.Species: Rickettsia typhi
C.Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Gene: omp
C:Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:AE006914; PIDN:AAL03825.1; PID:g15620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-159 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia A;Reference number: A97700; MUID:21442074; PMID:11557893
                                                                                                                                                                                                                                                                                                                                                                          142 TTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                 142 EIYGTACRQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                               87 SQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26 SRQEVGAATGAVVGGVAGOLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK----IK 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120 RNSTGOYCREYTOTVVIGGKOOKAYGNACROPDGOWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NKOGTGTLLGGAGGALLGSQFGHGKGQLVGVGVGALLGAVLGGQIGASLDEQDRKLLELT 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QERROQYCREFQOKAMIAGQKQEIYGTACROPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
55; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 38.1
61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34.0%; Score 284.5; DB
39.9%; Pred. No. 7e-18;
tive 25; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                   159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35.0%;
38.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 293; DB 2;
Pred. No. 1.2e-18;
29; Mismatches 56
                                                                                                           Tzianabos,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49;
                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 159;
                                                                                         T.; McDade, J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                         from Rickettsia
                                                                                                                                                 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prowazekii
                                   ricketts
                                                                                      Fu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -- 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
```

'n

```
RESULT 8
AI3418
17K surface antigen precursor [imported] - Brucella melitensis (strain 16M)
C:Species: Brucella melitensis
C;Date: 01-Feb-2002 *sequence_revision 01-Feb-2002 *text_change 01-Feb-2002
C;Accession: AI3418
R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivar.; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; I Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella mela; Reference number: AD3252; PMID:11756688
A;Accession: AI3418
A;Accession: AI3418
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-131 <KUR>
A;Cross-references: GB:AE008917; PIDN:AAL52516.1; PID:g17983328; GSPDB:GN00190
A;Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7

83169

conserved hypothetical protein PA3819 [imported] -
c;Species: Pseudomonas aeruginosa
c;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-182 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Complete genome sequence of Pseudomonas A;Reference number: A82950; MUID:20437337 A;Accession: D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R:Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Cross-references: GB:M16486; NID:g152467; PIDN:AAA26381.1; PID:g152468
C;Superfamily: rickettstal common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:AE004799; GB:AE004091; NID:g9949981; PIDN:AAG07206.1; GSPDB:GN00 A;Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Experimental source: strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28 QEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PA3819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RNSTGQYCREYTQTVVIGGKQQKAYGDACRQPDEQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -KLNQSLEKV---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QIAGTAIGAVVGGLLGNQIGGGTGKKIATVAGAVGGGYAGNKVQEGMQERDTYTTETRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQLVGVGVGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLG
                                                                                                                                                                                                                                                                                                                                                                                                                                 STVHDSSEKVVGYDVKYMLDGKAGQIRMERDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----KAGQVTRWRNP 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 128.5; DB z;
Pred. No. 0.0004;
Prematches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 284; DB 2; Li
Pred. No. 7.7e-18;
Pred. No. 75-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PA01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               opportunistic
                                                                                                                                                                                     Brucella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hickey,
Larbig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                         D.; Letes:
                                                                                                                                                                                                                                                Ivanova,
                                                                                                                                                                                     meliter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAO1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               patho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lim,
```

```
RESULT
S23787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Accession: B83514
R:Stover, C.K.; Pham, X.Q.; Erwin, adman, S.; Yuan, Y.; Brody, L.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
B83514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
A; Gene: BMEI1335
A; Map position:
                                                                                          δÃ
                                                                                                                          В
                                                                                                                                                      δÃ
                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                               A;Gene: PA1053
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conserved hypothetical protein PA1053 [imported] - Pseudomonas aeruginosa (strain
C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                              Дb
                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-154 <STO>
A; Cross-references: GB:AE004537; GB:AE004091; NID:g9946960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Reference number: A82950;
A;Accession: B83514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                A; Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Complete genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153
                                                              121
                10
                                                                                             83
                                                                                                                          61
                                                                                                                                                          30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14 GKGSG--FPSLGGSSQKPETNLLASLGNGLFGNSASQLSAADRRKALEAEYRALEYSPAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47 GKGSGRVAMAIGG------AVLG-GLIGSKIGQ--SMDQQDKIKLN-QSLEKVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
les 39; Conser
                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                       1 MRKSALIVASFTAMALALGGCQSSLTGDTYSREEARTVQTVRMGTIQALRPVKIEGTKTP
                                                                                                                                                                                                                      1 MNRGCLQGSSLIIISVFLVGC----AQNFSRQE-----
                                                                                                                                                VGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL-----
                                                              STRAYVQQVDQGQIFR
                                                                                             --NOSLEKVKAGOVTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GRW 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPD 152
                                                                                                                            IGSIAGAGVGGVAGSAVGGGKGSYVAAIIGAVAGGLLGAATEEGLTRTQGVEITVREDDG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KSVLWSGAGS-NAGDVTAAQPYQ-----VGSQNCRQYSHSFTIGGDQQTVRGTACRNPD 124
                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence of Pseudomonas
50; MUID:20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.0%;
                                                                                                                                                                                                                                                                    13.9%;
                                                                                             96
                                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
                                                                                                                                                                                                                                                    Score 116; DB 2.
Pred. No. 0.0042;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 125.5; DB 2
Pred. No. 0.00052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aeruginosa
                                                                                                                                                                                                                                                       41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                   Length 154
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                PIDN:AAG04442.1; GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PA01,
                                                                                                                                                                                                                                                       40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            opportunistic
                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92
                                                                                                                                                          82
                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                     ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þa
```

outer membrane lipoprotein precursor - Yersinia en C;Species: Yersinia enterocolitica C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 C;Accession: S23787 R;Bacumler, A.J.; Hantke, K. J. Bacteriol. 174, 1029-1035, 1992 J. Bacteriol. 174, 1029-1035, 1992 A;Reference number: S23786; MUID:92121089 A;Accession: S23787

Yersinia enterocolitica

10-Nov-1995

#text_change

29-Sep-1999

facilitates

ferrioxamine uptake

A; Status: preliminary A; Molecule type: DNA

```
lipA protein [imported] - Agrobacterium tumefaciens (strain C58, Dupont) C;Species: Agrobacterium tumefaciens (Species: Agrobacterium tumefaciens (Spate: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 11-Jan-202 C;Accession: AD2696 R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Wonks, D.; Chen, L.; Wood, G.E.; (erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Karp, P.; Romero, P.; Zhang, S.
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A)Accession: B82837
A)Status: preliminary
A)Molecule type: DNA
A)Residues: 1-257 <SIM>
                                                                                                                                                                                                                                                                                                         A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R. anonymous. The Xylella fastidiosa Consortium of the Organization for Nucleotide Sequent Nature 406, 151-157, 2000

A. Title: The genome sequence of the plant pathogen Xylella fastidiosa.

A. Reference number: A82515; MUID:20365717

A. Note: for a complete list of authors see reference number A59328 below
                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              conserved hypothetical protein xF0178 [imported] - xylella fastidiosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Residues: 1-155 <BAE>
A;Cross-references: EMBL:X60448; NID:948577; PIDN:CAA42977.1; PID:948579
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                    105 GTÁIGALIGGLYGNOFGHGNGRKÁLTAAGÁVAGGFIGNEV 144
                                                                                                                                                                                         31 GAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSKI 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                       XF0178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 127 VOKOGPTRFSVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35 GAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7 AVAIAAVTLTGCANNNTLSGDVESASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVNGAIG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                     Similarity 50.(
20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            --NOSLEKVKAGQVTRWRNPDTGNSYSVEP 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGQGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLIIISVELVGCAQN------FSRQE------------VGAAT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                 13.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13.6%; Score 113.5; DB 24.7%; Pred. No. 0.007;
                                                                                                                                                                                                                                     8;
                                                                                                                                                                                                                      Score 112; DB 2; Length 257; Pred. No. 0.016; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19; Mismatches
                                                       #text_change 11-Jan-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 155;
      G.E.; Chen, Y.; Woo,
yvy, R.; Li, M.; McClel
                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51;
                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9a5c)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
```

RESULT 14 S58234

QYDb Q ДЪ QΥ

lipA protein – Rhizobium leguminosarum C;Species: Rhizobium leguminosarum

```
A; Map position: circular chromosome
                                                                                                                                                                                                                                                                      C;Genetics:
A;Gene: AGR_C_1782
                                                                                                                                                                                                                                                                      A;Cross-references: GB:AE007869; PIDN:AAK86781.1; PID:g15155981; GSPDB:GN00169
                                                                                                                                                                                                                                                                                                                                                                      R;Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Science 294, 2323-2328, 2001
A;Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrot
                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-125 <KUR>
                                                                                                                                                                                                                                                                                                                                                             A;TitLe: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                           lipA protein [Imported] - Agrobacterium tumefaciens (strain C58, Gereon)
C;Speciles: Agrobacterium tumefaciens
C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 11-Jan-2002
C;Accession: D97478
                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
D97478
                                                                                                                                                                                               Matches
                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:AE008688; PIDN:AAL41986.1; PID:g17739358; GSPDB:GN00186
A;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-142 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58
A;Accession: AD2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science 294, 231
A; Authors: Yoo,
111 GAACRNDDGSW
                                      145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                   60 LETAPVGTPVIWTGDDVKGQVVANAP---YQVGN-----QNCRQYSHTLTVDGRDTRVR 110
                                                                 86 LEKVKAGOVTRWRNPDT-GNSYSVEPVRTYORYNKOERROOYCREFOOKAMIAGOKOEIY 144
                                                                                                                            30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQS 85
                                                                                                2 LSACTTTGTRPAGGSLFGR-SAQPSTPFLANLQGGIVG-KSGVELDRGDQTKALEABYKA 59
                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               108 QNCRQYSHTLTVDGRDTRVRGAACRNDDGSW 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           125 QYCREFQQKAMIAGQKQEIYGTACRQPDGRW 155
                            GTACROPDGRW 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10 SLIIISVELVGCAQNESRQEVGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSK 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGVELDRGDQTKALEABYKALETAPVGTPVIWTGDDVKGQVVANAP---
                                                                                                                                                                                 Similarity 27.5
36; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IGOSMDQQDKIKL----NOSLEKVKAGQVTRWRNDDT-GNSYSVEPVRTYQRYNKQERRQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SILCVSM-LSAC-----TTTGTRPAG--GSLFGR-SAQPSTPFLANLQGGIVG-K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2317-2323,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H.; Tao,
                                                                                                                                                                        13.3%; Score 111; DB 2;
27.5%; Pred. No. 0.0093;
tive 18; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001

Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Ka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13.3%;
27.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 111.5; DB 2;
Pred. No. 0.0096;
21; Mismatches 60;
                                                                                                                                                                            61;
                                                                                                                                                                                                    Length 125;
                                                                                                                                                                   Indels 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9;
```

٠,

```
R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
A;Accession: G87629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
G87629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein CC3073 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C;Accession: G87629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C:Date: 13-Jan-1996 *sequence_revision 01-Mar-1996 *text_change 08-Oct-1999 C:Accession: S58.234 R:Yeoman, K.H.; Delgado, M.J.; Downie, J.A.; Johnston, A.W.B. submitted to the EMBL Data Library, July 1995 A;Reference number: S58232 A;Accession: S58234
                                                                                                                                                            ş
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
Search completed: October 27, 2002, 11:11:35 Job time: 10.3523 secs
                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
A; Gene: CC3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-232 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:AE005673; NID:g13424723; PIDN:AAK25035.1; GSPDB:GN00148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X89983; NID:g929821; PIDN:CAA62010.1; PID:g929824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;Residues: 1-139 <YEO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                           122 RRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTE 161
                                                                                                                                                                                                         141 AAQEVGGIYKSGGFRYAQTVQAAPLVKIEKKMVTR----STVNL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106 QNCRQYTHTLTVDGKDTVARGAACRNDDGSW 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 QYCREFQQKAMIAGQKQEIYGTACRQPDGRW 155
                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81 VVGCKASGKKQEVGAVVGALLGAAAGSNLAKNDQGTGTAIGAVVGAGAGSLIGCKMQKSD 140
                                                                                                                                                                                                                                                                                                                                                                                 18 LVGCAQNFSRQEVGAATGAVVGGVAGQLFGK---GSGRVAMAIGGAVLGGLIGSKIGQSM 74
                                                                                                                                                                                                                                                                                                                                                                                                                                       Match 13.2%; Score 110.5; DB 2; Length 232; Local Similarity 26.9%; Pred. No. 0.02; les 43; Conservative 22; Mismatches 56; Indels 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55 SGVSLTDSDKQRALEAEYRALEGAAVGQPVLWTGKDVTGKVVAAAPYQV------GS 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70 IGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPD-TGNSYSVEPVRTYQRYNKQERRQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 SLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSK 69
                                                                                                         RAAASTRGERLGAVDSGTTFQALG---RTKDGKWILVGQD 217
                                                                                                                                                                                                                                                                        DQQDKIKLNQS------LEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h 13.3%; Score 111; DB 2; Length 139; Similarity 25.2%; Pred. No. 0.01; 38; Conservative 18; Mismatches 65; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65; Indels 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                       39;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                       5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6;
```

THIS PAGE BLANK (USPTO)

Run

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                     81.5
81.5
81.5
81.5
81.5
77.5
                     73.5
73.5
73.5
                                                                                                                                   74.5
74.5
74.5
                                                                                                                                                                                                                                                                                                         76.5
76.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-677-374-2
836
1 MNRGCLQGSSLIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_AA:*

1: /cgn2_6/ptodata/1/laa/5A_COMB.pep:*

2: /cgn2_6/ptodata/1/laa/5B_COMB.pep:*

3: /cgn2_6/ptodata/1/laa/6A_COMB.pep:*

4: /cgn2_6/ptodata/1/laa/6B_COMB.pep:*

5: /cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/1/laa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       October 27, 2002, 11:08:02; Search time 8.39378 Seconds (without alignments) 471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231628 seqs, 24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MNRGCLQGSSLIIISVFLVG.....IYGTACRQPDGRWQVISTEK 162
       GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                 865
551
551
2516
2516
2516
1021
1021
1021
1022
1023
913
913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                       US-09-067-351-2

US-08-360-490-2

US-08-34-077C-2

US-08-895-590-2

US-08-440-519-12

US-08-440-519-12

US-08-440-519-12

US-08-190-199A-65

US-08-220-151-6

US-08-220-151-6

US-08-375-709-7

US-08-375-709-7

US-08-375-709-7

US-08-375-709-7

US-09-090-793-5
                                                                                                                                                                                                                                                                                                                                                                                                         US-08-317-844B-2
US-09-034-177-3
US-07-803-633A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-556-978B-19
US-09-247-806-1
US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                                       US-09-553-498-8
                                       US-09-360-490-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                 Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Sequence
Sequence
                                   Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                     Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
Sequence
 Sequence
Sequence
                                                                                                                                 Sequence
Sequence
                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
1. Appli
2. Appli
3. Appli
3. Appli
3. Appli
2. Appli
3. Appli
4. Appli
6. Appli
6. Appli
6. Appli
7. Appli
7. Appli
7. Appli
7. Appli
9. 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19, App.
                 QΥ
```

73 8.7 254 4 US-09-128-450-26 73 8.7 606 4 US-09-823-494-26 73 8.7 606 4 US-09-8247-806-6 73.8.7 606 4 US-09-247-806-6 73.8.7 647 4 US-09-177-349-3 72.5 8.7 547 1 US-08-340-203A-3 72.5 8.7 547 2 US-08-452-427-3 72.5 8.7 547 2 US-08-452-427-3 72.5 8.7 731 2 US-08-911-364-1 72.5 8.7 731 2 US-08-911-364-1 72.8.6 101 4 US-08-556-978B-22 72 8.6 101 4 US-08-556-978B-22 72 8.6 101 4 US-08-556-978B-62 72 8.6 101 4 US-09-247-806-5 72 8.6 606 4 US-08-556-978B-63
254 606 479 5447 5447 101 101 101 101 101 101 101 101 101 10
4444CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
4 US-09-128-450-26 4 US-09-823-494-26 4 US-09-247-806-6 4 US-09-177-349-3 1 US-08-340-203A-3 2 US-08-452-427-3 2 US-08-452-427-3 3 US-08-911-364-1 2 US-08-678-0798-20 4 US-08-556-978B-22 4 US-08-556-978B-62 4 US-09-247-806-3 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-247-806-5 4 US-09-556-978B-63 4 US-08-556-978B-63
US-09-128-450-26 US-09-823-494-26 US-09-247-806-6 US-09-177-349-3 US-08-452-567-3 US-08-452-427-3 US-08-956-978B-20 US-08-556-978B-22 US-08-556-978B-22 US-09-247-806-3 US-09-247-806-5 US-09-247-806-5 US-09-256-978B-63 US-09-247-806-5 US-09-247-806-5 US-09-247-806-5 US-09-256-978B-63 US-09-256-978B-63 US-09-256-978B-63 US-09-256-978B-63

ALIGNMENTS

```
; TYPE: amino acid
; STRANDEDNESS: unkr
; TOPOLOGY: unknown
; MOLECULE TYPE: prote
US-08-556-978B-19
Query Match
Best Local Similarity
Thes 25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
US-08-556-978B-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 19, Application US/08556978B Patent No. 6268169
GENERAL INFORMATION:
                                                                                                                                                                                  TELEFAX: 302-773-0164
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                 APPLICATION NUMBER: 08/077,60
FILING DATE: JUNE 15, 1993
ATTORNEY/AGENT INFORMATION:
NAME: FLOYD, LINDA AXAMETHY
REGISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-9
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: E. I. DU PONT DE NEMOURS AND COMPANY
STREET: 1007 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: MICROSOFT WO CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: DISKETTE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: FAHNESTO TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                  LENGTH:
TYPE: a
                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS SOFTWARE: MICROSOFT WORD FOR WINDOWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1007 MAI
CITY: WILMINTON
STATE: DELAWARE
                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19898
                                                                                                                                                                    651 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FAHNESTOCK, STEPHEN F.
VENTION: NOVEL RECOMBINANTLY
                                                                                                                                                                                                                     : 302-892-8112
302-773-0164
                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNITED STATES OF AMERICA
                                                                                                                                  unknown
                               9.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPIDER SILK ANALOGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107
                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/556,978B
                                                                                                                                                                                                                                                                                                                                                       08/077,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.50 INCH
                                                                                                                                                                                                                                                                        CR-9389-A
              Score 81.5; DB Pred. No. 0.8; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            95
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRODUCED
                                               4;
                                             Length 651;
```

Conservative

w ••

17;

Indels 23;

Gaps

Ņ

д

23;

Gaps

2,

```
US-08-42.

Sequence 2, App.
Patent No. 5728810

CENERAL INFORMATION:

CANUT: Lewis, Randolph V.

Ming

Land B.
                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC DOSS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
APPLICATION UNTA;
FILING DATE: 19-APR-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Nephila clavipes
                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
US-09-247-806-1
Sequence 1, Application US/09247806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/247,806 CURRENT FILING DATE: 1999-02-11 EARLIER APPLICATION NUMBER: FR 98/01614 EARLIER FILING DATE: 1998-02-11 SOFTWARE: PATENTIAN SOFTWARE: PATENTIAN VER. 2.1 SEQ ID NOS: 14 SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Hinnan, Michael B.
TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: PROTEIN, A REBLICABLE VECTOR AND A TRANSFORMED CELL
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: PHILLIPPE, Michel
APPLICANT: GARSON, Jean-Claude
TITLE OF INVENTION: COSMETIC OR DERNATOLOGICAL COMPOSITION CONTACTING AT
TITLE OF INVENTION: LEAST ONE MATURAL OR RECOMBINANT SPIDER SILK OR AN
TITLE OF INVENTION: LEAST ONE MATURAL OR RECOMBINANT SPIDER SILK OR AN
FILE REFERENCE: 6388-0365-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 65
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   491 GGAGAAAAAAVGAGQEGIRGGGGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28 QEVGAATGAVVG----GVAGQ-------LFGKGSGRVAWAIGGAVLGG 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 36.8 les 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M:SSEE: Birch, Stewart, Kolasch & Birch
Falls Church Washington Street
Viz.
                                                                                                                                                                                                                                                                                                                                                                                                                                          22046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65 LIGSKIGQ 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08425069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QGAGAAAAAAYGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 81.5; D
Pred. No. 0.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                         Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
             JD NO: ....ACTERISTICS: 718 amino acids TOPOLOGY: linear US-08-317-844B-2
                                                                                                                                                                                   TELEFAX: (70) 241-1248
TELEX: 248345
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 718 mino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible operating system: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Vers APPLICATION DATA: US/08/317,844B FILING DATE: 04-OCT-1994 CLASSIFICATION: 435 CLASSIFICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
US-08-317-844B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTING COUNTING COUNTING COUNTING READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: TBM PC COMPATIBLE
THE COUNTING PC-DOS/MS-DOS
TIPMSE #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 14/
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-425-069-2 Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cli.
STATE: Vlry.
COUNTRY: U.S.A.
TTP: 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Lewis, Randolph V.
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: NI, Michael B.
TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND A TRANSFORMED CEL
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SECUENCES: 62

CORRESPONDENCE ADDRESS:
ADDRESSE: Birch, Stewart, Kolasch & Birch CITY: Falls Church
STATE: Virginia
COMMEDE. Virginia
                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acids
TYPE: amino acids
mnoncrow. 1:----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491 GGAGAAAAAAVGAGQEGIRGGGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 144
TELECOMMUNICATION INFORMATION: 140
TELEPHONE: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28 QEVGAATGAVVG----GVAGQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity 36.8 hes 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2, Application US/08317844B
5. 5989894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION:
                                                                                                                                                                                                                                                                                                               (703) 241-2848
                                                                                                                                                                                                                                                                                                                                             (703) 241-1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.78;
Score 81.5;
                                                                                                                                                                                                                                                                                                                                                                                              1447-105P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 81.5; DB
Pred. No. 0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1447-106P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 718;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSFORMED CELL
```

DΒ

Length 718,

Qy 밁 δÃ

```
В
                     δõ
                                                    밁
                                                                           Ş
                                                                                                                                                             US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/09034177 Patent No. 6127146
                                                                                                                    Query Match
Best Local Similarity
                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 747 amino acids
                                                                                                                                                                                                                                                                                                                       NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0486 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Lal, Preet:
APPLICANT: Guegler, Karl :
APPLICANT: Corley, Neil C
                                                                                                                                                                        IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: GI 1174414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 31/4 ro.
CITY: Palo Alto
                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                        28 QEVGAATGAVVG----GVAGQ-------LFGKGSGRVAMAIGGAVLGG 64
                                                                                                                                                                                                                             TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: HEREWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65 LIGSKIGQ 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QEVGAATGAVVG----GVAGQ------
LGGQGAGQ 558
                         LIGSKIGQ 72
                                                    QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQQGAGAAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3174 Porter Drive
                                                                                                                                                                                                                                                                                                               650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                        Conservative
                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEREWITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Diskette
                                                                                                                                                                                                                              single
                                                                                                                    9.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HUMAN FIBROUS PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Karl J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/09/034,177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 0.91;
                                                                                                      Score 81.5; DB Pred. No. 0.96; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----LFGKGSGRVAMAIGGAVLGG
                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17;
                                                                                                                                ω
••
                                                                                                                                Length 747;
                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                     В
                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                ρy
```

```
; MOLECULE TYPE: protein US-07-803-633A-13
                                                                                                                                                             US-09-553-498-8
                                                                                                                                                                                 RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-07-803-633A-13
                                                                                                      Sequence 8, Application US/09553498 Patent No. 6309861 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 13, Application US/07803633A Patent No. 5369025
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
APPLICANT: Schaeffner, Joerg
APPLICANT: Schwarz, Elisabeth
TITLE OF INVENTION: Process for
FILE REFERENCE: Case 20379
                                                                     APPLICANT: Ambrosius, Dorot APPLICANT: Rudolph, Rainer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 865 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Murphy Jr., Gerald M.
REGISTRATION NUMBER: 28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                    797
                                                                                                                                                                                                                                                                121 ERROQYCRE-FOOKAMIAGOKO 141
                                                                                                                                                                                                                                                                                                         748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (/ C. TELEFAX: 248345
                                                                                                                                                                                                                                                                                                                                                                            688 FMNGLAELFNGMGQVGQAIGKVVVGAAGAIVSTISGVSAFMSNPFGALAIGLIIIAGLVA 747
                                                                                                                                                                                                                                                                                                                                                                                                                17 FLVGCAQNFSRQ-EVGAATGAVVGGVAGQLFGKGSGRV------AMAIGGAVLGGLIG 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: BIRCH, STEWART, KOLASCH & BIRCH STREET: 301 No. 5369025th Washington Street CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
les 36; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                    ERKLEEAREMIKYMALVSAEER 818
                                                                                                                                                                                                                                                                                                         AFL--AYRYVNKLKSNPMKALYPMTTEVLKA-QATRELHGEESDD
                                                                                                                                                                                                                                                                                                                                           SKIGQSMDQQDKIKLN-----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22040-0747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (703) 241-2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YANAGIDA, No. 5369025oru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAZERIAN, Keyvan
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OGAWA, Ryohei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19911210
                                                                                         Dorothee
                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RECOMBINANT FOWLPOX VACCINE PROTECTION AGAINST MAREK'S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/07/803,633A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 78; DB 1;
Pred. No. 2.9;
30; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1644-103P
                the production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                     48;
                  of naturally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                         -LERTSID 796
                  folded and
                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                  secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                     7:
```

pr

2;

```
COMPUTER: FLORPY disk
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/067.351
CLASSIETA----
CLASSIETA----
CLASSIETA-----
HERBUT APPLICATION NUMBER: US/09/067.351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/553,498 CURRENT FILING DATE: 2000-04-20 PRIOR APPLICATION NUMBER: EP99107412.1 NUMBER OF SEQ ID NOS: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202 SL----TISSMEAEDAATYYCOOWSSNPLTFGAGTKLELKRAAAEQ-----KLISEE 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142 MSASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARFSGSGSGTSY 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107 SVEPVRTYQRYNKQERRQQYCREFQQKAMI--AGQKQEIYGTACRQPDGRWQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 LGGLIGSKIGQSNDQQDKIK-LN-------QSLEKVKAGQVTRWRNPDTGNSY 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83 LOMTSLRSEDTAMYYCARDYGAY WGQGTTVTVSSGGGGSGGGGGGGGGGGGDIELTQSPAI 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 LOGSSLIIISVFLVGCAQNESRQEVGAATGAVV----GGVAGQLFGKGSGRVAMAIGGAV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                           E: INCYTE PHARMACEUTICALS, INC. 3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMAN KERATINS
                                                                                                                                                                                                                          PF-0511 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 77.5; DB
Pred. No. 0.65;
28; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7;
                                   Вb
                                                          Qγ
                                                                                                                                  US-09-360-490-2
                                                                                 Matches
                                                                                                         Query Match
                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 551 anino acids
                                                                                                                                      TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: KERANOTO;
CLONE: 2029060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
US-09-360-490-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                            NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,132
REFERENCE/DOCKET NUMBER: PF-
TELECOMMUNICATION INFORMATION:
                        8 GSSLIIISVETLYGCAQNESRQEYGAATGAYYGGYAGQLEGKGSGRYAMAIGGAYLGGLIG 67
                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/067,351
                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 22.49
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:

CORRESPONDENCE ADDRESS:

ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
                                                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                        NAME: CERRONE, MICHAREGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: US
ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 3174 POR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       111 PSEPVCPPGGIOEVTVNQSLLTPLHLQIDPTIORVRÅEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         115 QRYNK 119
                                                                      Similarity 22.4
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68 SK-----IGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 GSSLIIISVELVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIG 67
                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                      KERANOT02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CALIFORNIA
                                                                                                                                                                                                                                                             (650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/09360490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                       (650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Baughn, Mariah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hillman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang, Y. Tom
                                                                                                                                                                                          single
                                                                                                                                                                                                                                    0) 000
, 845-4166
, NO: 2:
                                                                                 9.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                                                                                                   US/09/360,490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.28;
                                                                      Score 77; DB 4; Length 551;
Pred. No. 2;
                                                                                                                                                                                                                                                                                     PF-0511 US
                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 77; DB 2; Length 551; Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 53; Indels
                                                              53;
                                                          Indels
```

RESULT 8 US-09-067-351-2

Sequence 2, Application US/09067351 Patent NO. 5994081 GENERAL INFORMATION:

APPLICANT:

CORRESPONDENCE ADDRESS:

ADDRESSEE:

UMBER OF SEQUENCES:

TLE OF INVENTION:

Baughn, Mariah

STREET: 3174 PORTE CITY: PALO ALTO STATE: CALIFORNIA

COUNTRY:

USA

APPLICANT: Hiliman, APPLICANT: Corley, l APPLICANT: Baughn, l

Jennifer L.

В δÃ

밁

Qγ

Matches Query Match

Local Similarity 20.9 es 37; Conservative

9.3%;

28;

LENGTH: 255 TYPE: PRT ORGANISM: E. coli US-09-553-498-8

NUMBER SEQ ID NO 8

US-09-067-351-2

IMMEDIATE SOURCE

TOPOLOGY: LENGTH:

linear

Single

MMEDIA. LIBRARY: KEAL CNE: 2029060

KERANOT 02

.;

2;

CLASSIFICATION:
ATTORNEY.AGENT INFORMATION:
NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,132
REFERENCE,DOCKET NUMBER: PF-0

TELEFAX: (650) 845-4166
INFORMATION FOR SEQ ID NO: 2:

TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 855-0555

SEQUENCE CHARACTERISTICS:

TYPE: amino acids
STRANDEDNESS: single

```
RESULT 11
US-08-895-590-2
; Sequence 2, Application US/08895590
; Patent No. 6207410
                                                                                                                                                                                                    S
                                                                                                                                                                                                                                        В
                                                                                                                                                                      В
                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                        밁
                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-374-077C-2
                                                                                                                                                                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/08374077C Patent No. 6027912
                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/374,077C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Zheng, Wei
APPLICANT: Dubald, Manuel Marcel Paul
TITLE OF INVENTION: Genes Encoding an Invertebrate Alphal
TITLE OF INVENTION: Calcium Channel Subunit
                                                                                                        2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: BURNS, DOANE,
                                                                                                                                                                                                                                      2389 IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN
                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                      2448 SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                     138 GQKQEIYGT 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115 QRYNK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                                                                                     30 VGAATGAVVGGVAGOLFGKGSGRVAMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/0 FILING DATE: 19-JAN-1995 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                        Local Similarity
les 32; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                        GQGNQTYSS 2516
                                                                                                                                                                                                     -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SK-----IGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           McGowan, Malcolm M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           703-836-2021
                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hall, Linda
Ren, Dejian
                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Linda M
                                                                                                                                                                                                                                                                                                     9.2%; Score 76.5; 1
24.8%; Pred. No. 17;
tive 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39,300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWECKER & MATHIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           022650-264
                                                                                                                                                                                                                                                                                                                                      DB 3;
                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                    Length 2516;
                                                                                                                                                                                                                                                                                                      13;
                                                                                                                                                                                                                                      2447
                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                       us-07-910-760-12
                                                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                 STREET:
                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
```

```
; MOLECULE TYPE: protein US-08-895-590-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 24.8
Matches 32; Conservative
                                                                                                                                                                                                     sequence 12, Application US/07910760 Patent No. 5683864
                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 703-836-2021 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                       APPLICANT: Houghton, Michael
APPLICANT: Choo, Qui-Lim
APPLICANT: Kuo George
TITLE OF INVENTION: Combinat
TITLE OF INVENTION: Antigens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 39,300
REFERENCE/DOCKET NUMBER: 02:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 19-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: MCGOWAN, MALCOLM M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Zheng, Wei
APPLICANT: Dubald, Manuel
TITLE OF INVENTION: Genes
                                                      NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                   2508 GOGNOTYSS 2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2389 IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGSGPSSLSPQHQPYSGTLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                           2448 SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 057 - CTTY: Alexandria
                                                                                                                                                                                                                                                                                                                                                      138 GOKQEIYGT 146
                                                                                                                                                                                                                                                                                                                                                                                                                              84 -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30 VGAATGAVVGGVAGQLFGKGSGRVAMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/0 FILING DATE: 19-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22314-3187
SEE: Chiron Corporation: P.O. Box 8097 (Int. Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 699 Prince
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hall, Linda
Ren, Dejian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BURNS, DOANE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Linda M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PC-DOS/MS-DOS
                                                                                          Antigens
                                                                                         Combinations
Antigens for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/374,888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/895,590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                 (Int. Prop. R-440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Encoding an Insect Calcium Channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Marcel Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWECKER & MATHIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 76.5;
Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         022650-263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                          of Hepatitis C virus (HCV)
Use in Immunoassays for An
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version
                                                                                          Immunoassays for Anti-HCV Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2447
```

4

CA

```
RESULT 13
US-08-440-519-12
                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                          Sequence 12,
Patent No. 5
                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "TOPOLOGY: li
"MOLECULE TYPE:
US-07-910-760-12
                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Chiron Corporation
STREET: P.O. Box 8097 (Int. |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                         TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
           APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (510) 655-35.
INFORMATION FOR SEQ ID NO:
                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTY 94662-805, COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: IBM PC COMPATIBLE
TOTEM: PC DOS/MS-DOS
TOTEM: PC DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                                          149 ROPDGR------WQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                   912 NKRNTNRRPQDVKFPGGGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/FILING DATE: 07-JUL-1992 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                     852 PAILSPGALVVGVVCAAILRRHVGPGEGAVQWMNRLIAFASRGNHVSPGNSSTNPKPQKK 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          792 GAATAFVGAGLAGAAIGSVGLGKVLIDILAGYGAGVAGALVAFKIMSGEVPSTEDLVNLL 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 1021 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 QSL-----EKYKAGQ-VTRWRN----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31 GAATGAVVGGVAGQLFGK-GSGRVANAI----GGAVLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Blackburn Fsc B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity es 42; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Blackburn Esq., Robert P. REGISTRATION NUMBER: 30,447 REFERENCE/DOCKET NUMBER: 0101.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
                                                                                                     94662-8097
                                                                                                                                       Emeryville
                                                                                                                                                                                                                                                                                             2, Application US/08440519 5712087
                                                                                                                              CA
                                                                                                                  U.S.A.
                                                                                                                                                                                                                                 Choo, Qui-Li
Kuo, George
                                                                                                                                                                                                                                              Houghton, Michael
Choo, Qui-Lim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (510) 601-2702
                    DATA
                                                                                                                                                                                   Combinations of Hepatitis C virus (HCV)
Antigens for Use in Immunoassays for Anti-HCV Antibodies
12
                    Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              655-3542
US/08/440,519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.1%;
                                                                                                                                          (Int. Prop. R-440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/07/910,760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9,
```

```
RESULT 14
US-08-440-549-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                     Sequence 12, Application US/08440549 Patent No. 6312889
      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/910,760
FILING DATE: 07-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: US-08-440-519-12
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                 SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                   COMPUTER READABLE FORM:
MEDIJIM TYPE: Floppy disk
COMPUTER: LBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                     APPLICANT: Houghton, Michael
APPLICANT: Choo, Qui-Lim
APPLICANT: Kuo, George
TITLE OF INVENTION: Combinations of Hepatitis C virus (HCV)
TITLE OF INVENTION: Antigens for Use in Immunoassays for Anti-HCV Antibodies
                                                                                                                                                                                                       STREET: P.O. CITY: Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                          CLASSIFICATION:
                                                                     APPLICATION NUMBER: FILING DATE: 12-MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (510) 655-3542 INFORMATION FOR SEQ ID NO: 12:
                                                                                                                                                                                 COUNTRY: U.S.A.
ZIP: 94662-8097
                                                                                                                                                                                                                                ADDRESSEE: Chiron Corporation STREET: P.O. Box 8097 (Int.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149 ROPDGR------WOVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      912 NKRNTNERPQDVKFPGGGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 ERRQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              852 PAILSPGALVVGVVCAAILRRHVGPGEGAVOWMNRLIAFASRGNHVSPGNSSTNPKPOKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               792 GAATAFVGAGLAGAAIGSVGLGKVLIDILAGYGAGVAGALVAFKIMSGEVPSTEDLVNLL 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 1021 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84 QSL-----EKVKAGQ-VTRWRN-----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION: TELEPHONE: (510) 601-2702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31 GAATGAYVGGYAGQLFGK-GSGRYAMAI----GGAYLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 07/910,760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Blackburn Esq., Robert P. REGISTRATION NUMBER: 30,447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 1; CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11 Similarity 20.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
GY: linear
                                                                   UMBER: US/08/440,549
12-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.1%; Score 76; [
20.9%; Pred. No. 6;
                                                                                                                                                                                                                          (Int. Prop. R-440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0101.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----QYCREFQQKAMIAGQKQEIYGTAC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
```

Esq., Robert P.

```
RESULT 15
US-08-190-199A-65
; Sequence 65, Application US/08190199A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-440-549-12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 9.1%; Score 76; DB Best Local Similarity 20.9%; Pred. No. 6; Matches 42; Conservative 24; Mismatches
                                        FILING DATE: 10-AUG-19 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: EMBLET
APPLICANT: GOROCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (510) 655-3542 INFORMATION FOR SEQ ID NO:
                                                                                                                                                          APPLICATION NUMBER: US/08/190,199A
FILING DATE: 13-JUL-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB92/01483
FILING DATE: 10-AUG-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1021 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 30,447
REFERENCE/DOCKET NUMBER: 0101.002
TELECOMMUNICATION INFORMATION:
TELEPHONE: (510) 601-2702
                                                         APPLICATION NUMBER: GB 92
FILING DATE: 11-JUN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 91
FILING DATE: 10-AUG-1991
                                                                                                                                                                                                                                                                                                       SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: JONES, F
APPLICANT: WINTER,
TITLE OF INVENTION:
SEQUENCE CHARACTERISTICS: LENGTH: 236 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149 RQPDGR------WQVISTE 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        970 RRPEGRTWAQPGYPWPLYGNE 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     912 NKRNTNRRPQDVKFPGGGQIVGGVYLLPRRGPRLGVRATRKTSERSQPRGRRQPI--PKA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  852 PAILSPGALVVGVVCAAILRRHVGPGEGAVQWMNRLIAFASRGNHVSPGNSSTNPKPQKK 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   792 GAATAFYGAGLAGAAIGSYGLGKYLIDILAGYGAGYAGALVAFKIMSGEVPSTEDLYNLL 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1100 New CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: U.S.A. ZIP: 20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84 QSL-----EKVKAGQ-VTRWRN-----PDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31 GAATGAVVGGVAGQLFGK-GSGRVAMAI----GGAVLGGLIGSKI--GQSMDQQDKIKLN 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: PILLSBURY MADISON & SUTRO, L.L.P. 1100 New York Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBLETON, Michael J. GOROCHOV, Guy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WINTER, Gregory P.
VENTION: TREATMENT OF CELL POPULATIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JONES, Peter T.
                                                                                                                                             GB 9212419.7
                                                                                 GB 9117352.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----QYCREFQQKAMIAGQKQEIYGTAC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4; Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
```

```
Q
                                                                                                                                       Qy
                                                                                                                                                                                        дd
                                                                                                                                                                                                                                     δÃ
  밁
                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein US-08-190-199A-65
                                                                                                                                                                                                                                                                            Query Match 9.0%; Score 75; DB 2; Best Local Similarity 19.6%; Pred. No. 1.1; Matches 31; Conservative 27; Mismatches 7
201 L----TISSMEAEDAATYYCOOWSSNPLTFGAGTKLEL 234
                                         108 VEPVRTYQRYNKQERRQQYCREFQQKAMI--AGQKQEI 143
                                                                                        141 SASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARFSGSGSGTSYS
                                                                                                                                       63 GGLIGSKIGQSMDQQDKIK-LN-------QSLEKVKAGQVTRWRNPDTGNSYS 107
                                                                                                                                                                                   81 LQMTSLRSEDTAMYYCARDYGAYWGQGTLVTVSAGGGGSGGGGGGGGGGGGGQIVLTQSPAIM 140
                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                  6 LQGSSLIIISVFLVGCAQNFSR---QEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL 62
                                                                                                                                                                                                                                                                                   76;
                                                                                                                                                                                                                                                                                                                                  Length 236;
                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                   24; Gaps
```

5.

Search completed: October 27, 2002, 11:12:12 Job time: 9.39378 secs

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                               Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
  11
11
11
11
11
11
                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                          105.5
105.5
                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length: 0
length: 2000000000
                 100.0
100.0
97.5
97.5
13.4
12.9
12.6
12.6
12.6
12.6
                                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-2
836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 27, 2002, 10:58:51; Search time 21.544 Seconds (without alignments) 835.217 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A_Geneseq_032802:*
1: /SIDS1/gcgdata/c
2: /SIDS1/gcgdata/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           747574 seqs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10:
11:
12:
13:
14:
15:
                                                                                                                                                                                                                                                                                                                                                                                                                       // SIDSI/gcgdata/geneseq/geneseqp-embl/AA1980.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1981.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1984.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987.DAT: *
// SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MNRGCLQGSSLIIISVFLVG.....IYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                                 Length
162
162
161
161
256
256
224
223
223
230
309
                                                                                                                                                                                                                                                 DВ
  AAG78025
AAB81126
AAB81128
AAB81128
AAB81130
AAB820105
AAY34405
AAY34362
AAR05799
ABG15906
                                                                                                                                                                                                                                                 H
                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      747574
            Piscirickettsia sa
OSPA antigen amino
Optimised OSPA pro
C17E2 OSPA constru
OSPA B-cell epitop
Moraxella catarrha
Porphorymonas ging
Porphorymonas ging
PBOMP-2 gene prod.
                                                                                                                                                                                                                                             Description
```

9.1 346 22 AAB76750 Cc	AAG92057	76 9.1 324 22 AAB76751	9.1 300 11 AAR05878	76.5 9.2 2516 22 ABB61076	76.5 9.2 2516 17 AAW01884	76.5 9.2 2516 17 AAW01875	76.5 9.2 514 22 AAU36520	77 9.2 1251 22 ABB61254 I	77 9.2 551 21 AAY52398 I	77 9.2 429 10 AAP90064	77 9.2 147 22 ABB69847	77.5 9.3 900 22 ABG28648	77.5 9.3 255 22 AAY72020	77.5 9.3 255 22 AAB70769	77.5 9.3 255 22 AAB74199 Pel	77.5 9.3 255 21 AAB11398	78 9.3 865 14 AAR30169	78 9.3 646 18 AAW27178	79 9.4 618 21 AAB56803	80 9.6 2599 21 AAY75098	80 9.6 2017 22 ABG06301	80 9.6 116 19 AAY11028	80.5 9.6 542 22 ABB70501	80.5 9.6 542 22 ABB65791	80.5 9.6 542 22 ABB65790	80.5 9.6 302 22 AAM40157 Human	80.5 9.6 102 22 AAM41943 Hum	81.5 9.7 718 21 AAY59070 N.	81.5 9.7 718 19 AAW53346	81.5 9.7 718 12 AAR14308	.5 9.7 651 20 AAY40097	***
Corynebacterium gl	C glutamicum prote	Corynebacterium gl	Merozite surface a	Drosophila melanog	Invertebrate calci	Neuronal invertebr	Pseudomonas aerugi	Drosophila melanog	Human keratin KERT	Antigenic protein	Drosophila melanog	Novel human diagno	E. carotovora PelB	Expression plasmid	1B-scF	coli expressi		Nephila clavipes s	Human prostate can	Neisseria meningit	Novel human diagno		Drosophila melanog	Drosophila melanog	Drosophila melanog	Human polypeptide		clavipes spide	Nephila clavipes s	s dragli	E	prosopritio metallog

ALIGNMENTS

RESULT 1 AAG78025

15-JAN-2002 (first entry)

AAG78025;

AAG78025 standard; Protein; 162

À

```
Simard
Burzio
                                                                       11-MAR-2000; 2000GB-0005838.
01-JUL-2000; 2000GB-0016080.
01-JUL-2000; 2000GB-0016082.
29-JUL-2000; 2000GB-0018599.
                                                                                                                                                                                         Piscirickettsia salmonis; piscirickettsiosis; salmonid rickettsial; septicaemia; SRS; surface antigen; vaccine; antibacterial; fish; ATCC VR-1361.
WPI; 2001-639050/73.
N-PSDB; AAH79040.
                                                                                                                                      20-SEP-2001.
                                                                                                                                                       WO200168865-A2
                                                                                                                                                                        Piscirickettsia
                                                                                                                                                                                                                            Piscirickettsia salmonis polypeptide P10.6.
                                                     (AQUA-) AQUA HEALTH EURO LTD
                                                                                                                    12-MAR-2001; 2001WO-GB01055
                            ŗ,z
                                   Brouwers H,
                                                                                                                                                                         salmonis.
                                    Jones
                                   Ś
                                    Griffiths
                                    s
                                    Valenzuela P;
```

Claim 6; Fig 5; 25pp; English

New nucleic acids encoding an amino acid sequence homologous to the surface antigen present on Piscirickettsia salmonis are useful to protect fish against piscirickettsiosis

The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity to protect fish against P. salmonis which causes piscirickettsiosis, also known as salmonid rickettsial septicaemia.

```
В
                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                        (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                δð
                                                                            Kay WW,
                                                                                                                             17-SEP-1999;
                                                                                                                                             17-SEP-1999;
                                                                                                                                                               17-MAR-2001.
                                                                                                                                                                              CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 162;
                                                                                                                                                                                                           Region
                                                                                                                                                                                                                            Piscirickettsia salmonis
                                                                                                                                                                                                                                                       Poikilothermic vaccine; Ospa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                          OspA antigen amino acid sequence.
                                                                                                                                                                                                                                                                                                 11-JUL-2001
                                                                                                                                                                                                                                                                                                                          AAB81126 standard; Protein; 162 AA.
                                                                                                                                                                                                                                                                                                                    AAB81126;
                                                2001-316844/34
DB; AAF86246.
                                                                                                                                                                                                                                                                                                                                                                        121 ERROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MNRGCLQGSSLIIISVFLVGCAQNESRQBVGAATGAVVGGVAGQLFGKGSGRVAMAIGGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Loca J
                                                                                                                                                                                                                                                                                                                                                                ERROOYCREFOOKAMIAGOKOETYGTACROPDGRWOVISTEK 162
                                                                       Burian J,
                                                                                                                                                                                                                                                                                                                                                                                          VĽĠĠĹIĠŚKIĠQŚMDQQDKIKĹNQŚLEKVKAĠQVTRWRNPDTGNŚYŚVEPVRTYORYNKQ 120
                                                                                                                                                                                                                                                                                                                                                                                                   VLGGLIGSKIGOSNDQODKIKLNOSLEKVKAGOVTRWENPDTGNSYSVEPVRTYQRYNKO 120
                                                                                                                                                                                                                                                                                                                                                                                                                           MNRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                               (first
                                                                                                                        99CA-2281913.
                                                                                                                                        99CA-2281913.
                                                                                                                                                                                                                                       fish; Piscirickettsia salmonis; rickettsial pathogen;
salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                     /label= B_cell_epitope
                                                                                                                                                                                                   Location/Qualifiers
110..129
                                                                      Kuzyk MA;
                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 836; DB 22;
Pred. No. 3.2e-80;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162;
                                                                                                                                                                                                                                        disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                            Оy
                                                                                                                                                                                                                                                                                                                                                                                                              DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
```

```
RESULT 3
AAB81127
                Method for protecting septicaemia and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB;
                                                                              Kay ww,
                                                                                                 (KUZY/)
                                                                                                            (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local s
                                                                                                                                      17-SEP-1999;
                                                                                                                                                         17-SEP-1999;
                                                                                                                                                                              17-MAR-2001.
                                                                                                                                                                                                CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100
Matches 162; Conservative
                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                          кеу
                                                                                                                                                                                                                                                              Piscirickettsia salmonis.
                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                 vaccine;
                                                                                                                                                                                                                                                                                                       Poikilothermic
                                                                                                                                                                                                                                                                                                               Optimised OspA protein 17E2 amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                     AAB81127;
                                                                                                                                                                                                                                                                                                                                                                                AAB81127 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This invention relates to a method for the protection against infection salmonis. The method comprises administering an immunogenic amount of a particularly pointific antigen termed Ospa, or an immunogenic fragment of a particularly politiothermic fish, against the bacterial pathogen animals. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other fickettsial pathogen sequence represents P. salmonis Ospa protein. An Ospa protein with an antibody resonness.
                                              2001-316844/34
DB; AAF86247.
                                                                                                                                                                                                                                                                                                                                                                                                                         121 ERRÓQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                    121 ERRQQYCREFOQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 VLGGLIGSKIGOSNDOODKIKLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYORYNKO 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 2; Fig 2B; 35pp; English.
                                                                                             ) KAY W W.
) BURIAN J.
) KUZYK M A.
                                                                         Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQ 120
                                                                                                                                                                                                                                                                                                Ospa;
                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                  99CA-2281913
                                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162 AA;
                                                                                                                                                                                                                                                                           fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                /label=
                                                                         Kuzyk
poikilothermic fish against salmonid rickett:
rickettsial diseases comprises administering
                                                                                                                                                                                                         B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 836; DB 22; 100.0%; Pred. No. 3.2e-80; tive 0; Mismatches 0;
                                                                        MA,
                                                                                                                                                                                                                                                                                                                                                                                 161
                                                                                                                                                                                                                                                                                                                                                                               AA
                                                                                                                                                                                                                                                                                                                                                                                                                          162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
          rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162;
                                                                                                                                                                                                                                                                             disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

1

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents optimised P. salmonis OspA protein 17E2. The DNA encoding OspA 17E2 (AAF86247) has been optimised for expression in Ecsherichia coli. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                    Poikilothermic fish; Piscirickettsia vaccine; OspA; salmonid rickettsial sSRS; 17E2; fusion construct.
                                                                                                                                                                                                             Region
                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                            Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                          C17E2 OspA construct with N-terminal fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB81128 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of a
           (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A
                                                                                           17-SEP-1999;
                                                                                                                                               CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                      11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                AAB81128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                  17-SEP-1999;
                                                                                                                    17-MAR-2001.
                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      poikilothermic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention relates to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ROOYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97.5%;
ilarity 98.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fig
                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                           99CA-2281913
                                                                                                                                                                                                                                                                                            salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ن</u>
                                                                                                                                                                                              /label= Undefined_N·terminal_fusion_partner
96..256
/label= C17E2_OspA
                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the OspA protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tes to a method for the fish by the bacterial r
                                                                                                                                                                      "Product of OspA gene
Escherichia coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 815; DB 22;
Pred. No. 5.1e-78;
1; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   method for the protection against infect
the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                  a salmonis; rickettsial pathogen; septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                          partner
                                                                                                                                                                                      optimised for expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <del>|</del> --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                   disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                      ri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT 5
AAB81130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents the amino acid sequence of C17E2, a P. salmonis OspA construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a
                                (KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                          Poikilothermic fish; vaccine; OspA; salmor SRS; antibody.
                                                                                                                                                                                                                                                             OspA B-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   septicaemia
                                                                                                                                                            CA2281913-A1
                                                                                                                                                                                                                                                                                     11-JUL-2001
                                                                                                                                                                                                                                                                                                                                       AAB81130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for protecting septicaemia and other
                                                                                   17-SEP-1999;
                                                                                                            17-SEP-1999;
                                                                                                                                     17-MAR-2001.
                                                                                                                                                                                    Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
es 158; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                  RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                          ROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                              KAY W W.
BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for protecting poikilothermic fish against salmonid rickettsial emia and other rickettsial diseases comprises administering a containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAF86248
                                 KUZYK M A.
                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256 AA;
                                                                                                                                                                                                                                                             epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5; 35pp;
                                                                                                                                                                                                                         salmonid
                                                                                   99CA-2281913
                                                                                                            99CA-2281913.
                                                                                                                                                                                                                                                                                                                                      Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuzyk MA;
                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                         Piscirickettsia salmonis; rickettsial p
nid rickettsial septicaemia; rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                       rickettsial septicaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 815; DB Pred. No. 9.3e
                                                                                                                                                                                                                                                              #2
                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                       Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22;
9.3e-78;
hes 1;
                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156
```

0

Kay WW,

Burian J,

Kuzyk

¥.

2001-316844/34.

Example 2; Page 17; 35pp; English.

Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis

This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a particularly poikilothermic fish, against the bacterial pathogen animals, Phe method is also useful for protecting animals, rickettsial septicaemia (SRS) and other rickettsial pathogen sequence represents an immunogenic epitope of the P. salmonis. The position of also useful for protecting against salmonid protein. The peptide is used to raise rabbit anti-OspA antibodies.

```
OCCCCCXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
AAB20105
ID AAB2
XX
AC AAB2
XX
The present sequence is that of BASB113 protein from Moraxella Catarrhalis strain Mc2831 (ATCC 43617), a causative agent of otitis media in children and pneumonia in adults. The invention provides BASB113 polypeptides, and polynucleotides encoding them, as well as expression vectors, host cells and methods for producing BASB113 composition comprising a BASB113 polypeptide, an immunogenic
                                                                                                      Claim 1; Page 67; 86pp;
                                                                                                         New BASB113 polypeptide isolated from Moraxella catarrhalis bacterium, useful for diagnosing and producing vaccines against bacterial infections such as otitis media and pneumonia.
                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                            Thonnard J;
                                                                                                                                                                                                                             (SMIK ) SMITHKLINE
                                                                                                                                                                                                                                                     25-JUN-1999;
                                                                                                                                                                                                                                                                  23-JUN-2000; 2000WO-EP05851.
                                                                                                                                                                                                                                                                                                04-JAN-2001.
                                                                                                                                                                                                                                                                                                                                     Moraxella catarrhalis
                                                                                                                                                                                                                                                                                                                                                  BASB311; infection; otitis media; pneumonia; therapy; diagnosis;
                                                                                                                                                                                                                                                                                                                    WO200100836-A1
                                                                                                                                                                                                                                                                                                                                                                                   Moraxella catarrhalis BASB113 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                    23-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB20105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB20105 standard; Protein; 224
                                                                                                                                                                        2001-112458/12.
DB; AAF30043.
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                               99GB-0015044.
                                                                                                                                                                                                                      BEECHAM BIOLOGICALS
                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ā
```

AAY34318

ö

```
RESULT 7
AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PC) polypeptide sequences given in AAX34583. AAX91802 to AAX91989 represent PCR primers used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                               Claim 1; Page 469; 588pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                       Antigenic Porphorymonas gingivalis peptides
                                                                                                    WPI; 1999-385613/32.
N-PSDB; AAX91705.
                                                                                                                                      Ross
                                                                                                                                                                                23-APR-1998;
05-MAY-1998;
22-MAY-1998;
29-JUL-1998;
                                                                                                                                                                                                                      04-AUG-1998,
10-DEC-1997,
31-DEC-1997,
30-JAN-1998,
10-MAR-1998,
09-APR-1998,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S_1 S_2 S_3 S_3 S_3 S_4 S_6
                                                                                                                                                           (CSLC-) CSL LTD
                                                                                                                                               Agius
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                         10-DEC-1998;
                                                                                                                                                                                                                                                                                                           17-JUN-1999.
                                                                                                                                                                                                                                                                                                                                               Porphorymonas
                                                                                                                                                                                                                                                                                                                                                               Porphorymonas gingi
vaccine; antigenic.
                                                                                                                                                                                                                                                                                                                                                                                      Porphorymonas gingivalis protein PG3.
                                                                                                                                                                                                                                                                                                                                                                                                                   25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY34487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY34487 standard; Protein;
                                                                                                                              CT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fragment of a BASB113 polypeptide, or a polypeptide having at least polynucleotide sequence identity to BASB13, or comprising a polypeptide encoding such a polypeptide. A claimed method of polypeptide or antibody. A claimed therapeutic composition useful intreating humans with M. catarrhalis infection comprises at least polypeptides also have utility in raising specific antibodies, and in screening for antibacterial drugs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKTGRDAILGAAVGAAAGAYNERQAK----QIEQQMQGTGVTVTHDTDTGN 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GVVLLASSMALAGCANTGT---TGNGTGFGGANVNKAVIGAVAGAL---GGTAISKATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSSLIIISVFLVGCAQNFSRQEVGAATG-----AVVGGVAGQLFGKGSGRVAMAIGG 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----AVLGGLIGSKIGOSMDOODKIKLNOSLEKVKAGGVTRWRNPDTGN 104
                                                                                                                               Barr IG,
Rothel LJ,
                                                                                                                                  Rothe1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                        98AU-0002264.
98AU-0002911.
98AU-0003128.
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                             98AU-0004917
                                                                                                                                                                                                                                                                                                                                                           gingivalis; PG; periodontal disease; gingivitis;
                                                                                                                                                                                                    98AU-
                                                                                                                                                                                                                                                                                                                                            gingivalis
                                                                                                                                                                                                                                     98AU-0001546
                                                                                                                                                                                                                                              97AU-0001182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                       97AU-0000839
                                                                                                                                                                                                                                                                                   98WO-AU01023.
                                                                                                                            Hocking DM, Webb EA;
                                                                                                                                                                                                  -0003338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 108; DB 22
Pred. No. 0.0028;
                                                                                                                                 Margetts MB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ã.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                   for preventing
                                                                                                                              Patterson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                              MA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
```

В Ş

110 PVRTYQRYNKQERRQQYCRE 129

1 PVRTYQRYNKQERRQQYCRE 20

Matches

Loca1

Similarity

13.48; 50, 100.08; Pr

Score 112; DB 22; Pred. No. 4.9e-05;

Length 20; Indels

Mismatches

0

0; Gaps

0,

Conservative

Query Match

1

```
AAY34362
     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            888888×8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                             04-AUG-1998;
10-DEC-1997;
31-DEC-1997;
30-JAN-1998;
10-MAR-1998;
09-APR-1998;
23-APR-1998;
AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PG) polypeptide sequences given in AAX34318 to AAX34583. AAX91802 to AAX91989 represent PCR primers used in the isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can
                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines secially against Porphorymonas gingivalis. Probes can be used to detect Porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease especially gingivitis.
                                                                                                                                                                                                                                         05-MAY-1998
22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                    WO9929870-AJ
                                                                                                                                                                                                                                                                                                                                                                                                                                              Porphorymonas gingivalis; vaccine; antigenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY34362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY34362 standard;
                                                                                                        gingivitis
                                                                                                                Antigenic Porphorymonas gingivalis
                                                                                                                                                    WPI;
                                                                                                                                                                          Ross
                                                                                                                                                                                    Agius
                                                                                                                                                                                                                               29-JUL-1998
                                                                                                                                                                                                                                                                                                                                                       10-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                             17-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                         Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Porphorymonas gingivalis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                         (CSLC-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66 ALIGKKMDKQKK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9 SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAM-AIGGAVLGGLIG
                                                                                                                                        1999-385613/32
DB; AAX91580.
                                                                                                                                                                         ВС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                 CT,
                                                                               1; Page 325-326;
                                                                                                                                                                                                          CSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                        Rothel
                                                                                                                                                                        Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           223 AA;
                                                                                                                                                                                                          LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                         gingivalis.
                                                                                                                                                                                                                              98AU-0005028
97AU-0001182
97AU-0011182
98AU-0001546
98AU-0002164
98AU-0003128
98AU-0003128
98AU-0003338
98AU-0004917
                                                                                                                                                                                                                                                                                                                                                       98WO-AU01023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12.6%;
36.1%;
                                                                                                                                                                        Hocking DM,
Webb EA;
                                                                              588pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 105.5; DB Pred. No. 0.0051;
                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        periodontal disease; gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PG3
                                                                                                                                                                                  Margetts MB,
                                                                                                                  peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 20;
                                                                                                                  for
                                                                                                                 preventing
                                                                                                                                                                                    Patterson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                    MA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

δõ

30 VGAATGAVVGGVAGQLEGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKL

82

0;

Gaps

0,

Query Match Best Local S

Matches

21;

Conservative

9;

Similarity

12. 39.

. 6%:

Score 102; DE Pred. No. 0.00 9; Mismatches

Length 154; Indels

```
AAR05799
ID AAR(
                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 × 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                             The PBOMP proteins were isolated from a PBOMP-enriched insoluble cell wall fraction from physically disrupted cells of H. Influenzae and then solubilising the PBOMP from the cell wall fraction by heatiful in the presence of a detergent or digesting the cell wall fraction with lysozyme, opt. In the presence of a detergent. The genes encoding the PBOMP proteins were isolated by screening a DAN library with an oligonucleotide probe based on the amino acid sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     be used to detect Porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease especially gingivitis.
                                                                                                                                                                 with lysozyme, opt. in the presence of a detergent. The encoding the PBOMP proteins were isolated by screening with an oligonucleotide probe based on the amino acid s PBOMP protein, or using antibodies to PBOMP.
                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer membrane protein epitopes of Haemophilus the prodn. of antibodies, in vaccines and for productions of the production of the producti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-SEP-1988;
21-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Anilionis A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PRAX-) PRAXIS BIOLOGICS IN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-MAR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9002557-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Praxis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PBOMP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR05799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR05799 standard; Protein; 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1990-115815/15.
DB; AAQ03870.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGKKMDKQKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAM-AIGGAVLGGLIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIGQSMDQQDK 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  membrane proteins;
s Biologics Outer M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                           154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          230 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       influenzae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seid RC,
                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88US-0239572.
89US-0396572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89WO-US03779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12.6%;
                                                                                                                                                                                                                                                                                                                                                                                             164pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Deich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PBOMP-2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 105.5; DB Pred. No. 0.0053;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           immunisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zlotnick GW,
DB
0.0074;
23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      influenzae- used in
prodn. of reagents fo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reagents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          230;
                                                                                                                                                                                                                                                                                             by heating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
```

₽

62

```
The invention relates to isolated polynucleotide (I) and CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC intentifying expressed genes. (I) is useful an approached the sequence tags to restore normal activity of (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as ciscular protection of sites expressing (II). (I) and (II) are useful for generating antibodies against it, detecting or a food supplement. (II) and its binding partners are useful in medical corrections for sites expressing (II). (I) and (II) are useful for treating corrections of sites expressing (II). (I) and (II) are useful for treating corrections of the polypeptide and polynuclectide sequences have applications in corrections. The polypeptide and polynuclectide sequences have applications in corrections for generating and produce their types of data and products dependent on DNA and correction, but was obtained in electronic format directly from WIPO correction, but was obtained in electronic format directly from WIPO corrections in the printed correction, but was obtained in electronic format directly from WIPO corrections.
                                                                                               Matches
                                                                                                              Query Match
Best Local
                   185 IISILPAKVAVDNSQNKRNAQAFGALIGAVAGGVIGHNVGSGSNSGTTAGAVGGGAVGAA 244
                                                                                                                                            Sequence
                                13 IISVFLVGCAQNFSR-----QEVGAATGAVVGGVAGQLFGKG--SGRVAMAIGGAVLGGL 65
                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 20; SEQ ID No 46265; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations proposable for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel human diagnostic protein #15897.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABG15906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABG15906 standard; Protein; 309 AA.
                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-639362/73
                                                                                                                                         309 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VGTLGGGALGGIAGSTIGGGRGQAIAAVVGAIGGAIAGSKIEEKMSQVNGAEL 114
                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-0540217.
2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                               11.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang
                                                                             Score 98; DB:
Pred. No. 0.04
11; Mismatches
                                                                            DB 22;
0.047;
hes 39;
                                                                                               Length 309;
                                                                        Indels
                                                                    Ψ
```

, 문

Qγ

```
CC clavipes) recombinant silk protein pETNCDS. The invention of the orb-weaver spider (Nephila CC clavipes) recombinant silk protein pETNCDS. The invention control of the structural proteins. Organic acids are used to lyse recombinant control of the control of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DT
XX
DE
XX
CE
XX

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 11
AAB82611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 2; Page 41-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recovering structural polypeptides in a biological sample, useful for purifying and spinning spider silks and other structural proteins, comprises treating the sample containing the polypeptides with an acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mello CM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (MELL/) MELLO C M.
(ARCI/) ARCIDIACONO S.
(BUTL/) BUTLER M M.
(USSA ) US SEC OF ARMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-JAN-2000; 2000US-0490291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-2000; 2000WO-US30086,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200153333-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference 522 rencoded by CGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference 427 encoded by TAT'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Misc-difference 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Spider; orb-weaver; silk protein; pETNcDS; structural protein; purification; fibre; spinning.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nephila clavipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spider recombinant silk protein pETNCDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB82611;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB82611 standard; Protein; 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-483136/52.
DB; AAH26304.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 AGSMVNDKTLMEGVSLTYKEGTKVYTSTQVGKEFQFT 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66 IGSKI-----GOSMDQQDKIKLNQSLEKVKAGQVT 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BUTLER M M.
US SEC OF ARMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arcidiacono
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "encoded by GAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                49pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Butler MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
```

٠,

```
RESULT 12
ABB66232
В
                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                            Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                             The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                  capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of
                                                                                                                                                                                                                                   The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 25488; 21pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                New isolated nucleic acid genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila; developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABB66232 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           results
is easy
2124 QQQQQRQVGGGNGPSMNALGGRGSGAVGSGSGN-----
                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                        Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABB66232;
                                                                                                                                                                                                                                                                                                                                                                                              (PEKE ) PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              benign
                                                                                                                                                      (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         320 QGAGAAAAAAAGGAGQGGLGGQGAGAAAAAAAGGAGQGGLGGQGAGQ 366
                      23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                  ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QEVGAATGAVVGGVAGQ--LFGKGSGRVAMAIGGAVLGGLIGSKIGQ
              QNFSRQEVGAATGA---VVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                 2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s in better recovery of protein at higher purity (70-99%), y to scale up, and the fibres are spun in an environmentally solution reducing hazardous waste accumulation and cost.
                                           Similarity 27.4
34; Conservative
                                                                                                                                                                                                                                                                                                                                      ABL10335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                               CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        melanogaster polypeptide SEQ ID NO 25488
                                                                                             2309
                                                                                                                                                                                                                                                                                                                                                                        Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       528 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                               NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
                                                        10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10.9%;
                                                                                                                                                                                                                                                                                                                                                                        Ŀi
                                                                                                                                                                                                                                                                                                                                                                        DWD,
                                                                                                                                                                                                                                                                                                detection reagent for detecting 1000 for elucidating cell signalling and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 biology;
                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                           Score 86.5; DB Pred. No. 9.9; 8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 91; [
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                        Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                        E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2
-GGGGGGGAGGSQVGGNGGGNGV 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19;
                                            55;
                                                                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 528
                                              Indels
                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
                                                                                                                                                                                                                                                              English
                                                                     2309
                                            17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                               WIPO
                                                                                                                                                                                                                            is
                                            5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲,
```

```
RESULT 13
ABB58019
ID ABB58
XX ABB58019
XX ABB58
XX ABB58
XX DTG
DT 26-M
XX Dros
XX Dr
     밁
                                                  δÃ
                                                                                                    В
                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLI6176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genes from Drosophila and interactions
                                                                                                                                                                                                                                                                                                                                                          The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2179
                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 849; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; ABL02122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB58019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB58019 standard; Protein; 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2231 QRAQ 2234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    139
     522
                                                                                                       463
                                                  91 AGQVTRWRNPDTGNSYSV----
                                                                                                                            31 GAATGAVVGGVAGQLFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK
                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
SGSGSHPGTPTSLHAHSANGTSSSLLGGGLHLATPHQMVAAGGSPVMLHQQQQQQQQHQQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-656860/75.
                                                                                                    GPQTGGAGGGGGSSSGNGAGTLAVS-GSVTTGAGAGSGTGSSNSNSNSGGSSGSVSGSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QKQE 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSVGQS-----GGGGQGRYPTPIQRPNNYPQHP----QQQQQQQQQQQQQQREQAAAAAAVAA 2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IKLNOSLEKVKAGOVTRWRNP-DTGNSYSVEPVRTYORYNKOERROOYCREFOOKAMIAG
                                                                                                                                                                                                      1 Similarity 30; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              melanogaster polypeptide SEQ
                                                                                                                                                                                                                                                                                                             666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              developmental biology;
                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                           9.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          detection reagent for detecting 1000 for elucidating cell signalling and o
                                                                                                                                                                                                   22;
                                                                                                                                                                                                                           Score 82;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Myers
                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell signalling;
                                                                                                                                                                                                                                                        DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IJ
                                                  ----- EPVRTYQRYNKQERRQQ 125
                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO
                                                                                                                                                                                                         58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   849.
                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention 
ignalling and
                                                                                                                                                                                                         26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reagent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0 or more
cell-cell
                                                                                                                                                                                                   Gaps
                                                                                                    521
                                                                                                                                                      90
                                                                                                                                                                                                                                                                                                                                                                                     WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           is
                                                                                                                                                                                                         ?,
```

RESULT 14 AAY40097

밁

```
RESULT 15
AAR14308
ID AAR14
                                                                                                       В
                                                                                                                         δÃ
                                                                                                                                               망
                                                                                                                                                                Q
                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                Query Match
Best Local
        15-JAN-1992
                                          AAR14308 standard;
                            AAR14308;
                                                                                                                                                                                                                                  The present sequence represents the natural spider silk protein spidroine major 1. The protein improves the moisturizing/softening action of the compositions. The protein, and its fragments are used in cosmetic or dermatological compositions. These compositions are used as hair or skin care products; and make-up or sunscreens. As the protein is a good, persistent film-formers on the skin agents that are generally difficult to administer, e.g. vitamins, which and hair
                                                                                               551 LGGQGAGQ 558
                                                                                                                     491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                           Sequence
                                                                                                                  65 LIGSKIGQ 72
                                                                                                                                                                                                                                                                                                                                                   Claim 3; Fig 1; 32pp; French.
                                                                                                                                        28 QEVGAATGAVVG----GVAGQ------LFGKGSGRVAMAIGGAVLGG 64
                                                                                                                                                                                                                                                                                                                                                          Cosmetic or dermatological composition containing spider silk protein, for hair or skin care, in make-up or sunscreens
                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1999-510729/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                Philippe M,
                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (OREA ) L'OREAL SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FR2774588-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nephila clavipes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Spider silk protein; spidroine major 1; cosmetic; make-up; dermatological compositions; hair care; skin care; sunscreen; hormone; moisturizer; skin disorder; skin disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Spider silk protein spidroine major 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY40097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY40097 standard; protein; 651 AA.
                                                                                                                                                                                          Similarity
(first entry)
                                                                                                                                                                                                                       651 AA;
                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                             Garson JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98FR-0001614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98FR-0001614.
                                         Protein;
                                                                                                                                                                                     9.7%;
                                         718
                                                                                                                                                                Score 81.5; DB 20; Pred. No. 6.7; 3; Mismatches 17;
                                                                                                                                                                                                                                                                                                                                                                                                                           Arraudeau
                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                           JÞ;
                                                                                                                                                                   Indels
                                                                                                                                                                                     Length 651;
                                                                                                                                                              2,
```

FXAX

```
Search completed: October 27, 2002, 11:09:11 Job time : 22.544 secs
                                                       Дb
                                                                         Qy
                                                                                               Дb
                                                                                                                 δÃ
                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                      Matches
                                                                                                                                                                           The spider silk protein contains a basic 34 amino acid repeat. The repeat itself contains 3 regions. The first comprises 0-9 amino acids with a sequence AGR(GGX)2. This region is not highly conserved. The second region has a sequence GAG(A)x which is highly conserved and is 8-10-amino acids long. The third segment is (GGX)5 and is 15 amino acids long and is very highly conserved. In most in a silk having lower elasticity.
                                                                      491 QGAGAAAAAAVGAGQBGIRGQGAGQGGGGGGGGGGGGGGGGGGAGAAAAAAGGAGQGG 550
                                                     551
                                                                  65 LIGSKIGQ 72
                                                                                                                                                                                                                                                                                               DNA encoding spider silk protein-1 and 2 and variants - isolated from Nephila clavipes, for prodn. of spider silk protein and fibres having desired characteristics
                                                                                    28 QEVGAATGAVVG----GVAGQ-------LFGKGSGRVAMAIGGAVLGG
                                                                                                                                                                                                                                                                                     Claim 15; Page 23; 48pp; English.
                                                                                                                                                                                                                                                                                                                                                                   WPI; 1991-312199/43.
                                                                                                                                                                                                                                                                                                                                                                                                          (UYWY-) UNIV OF WYOMING.
                                                                                                                                                                                                                                                                                                                                                                                                                                  20-APR-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-APR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-OCT-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EP452925-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nephilia clavipes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein superfibre; major ampullate silk; orb web spider.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N.clavipes dragline silk protein-1.
                                                LGGQGAGQ 558
                                                                                                                                  25;
                                                                                                                              Similarity 36.8
25; Conservative
                                                                                                                                                                                                                                                                                                                                                          AAQ14183.
                                                                                                                                                                                                                                                                                                                                                                                         Xu M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  91EP-0106217.
                                                                                                                                                                                                                                                                                                                                                                                                                               90US-0511792
                                                                                                                                                                                                                                                                                                                                                                                    Hinman M;
                                                                                                                                       9.7%;
                                                                                                                        Score 81.5; DB
Pred. No. 7.6;
3; Mismatches
                                                                                                                                             DB
                                                                                                                       17;
                                                                                                                                           12;
                                                                                                                    Indels
                                                                                                                                        Length
                                                                                                                                      718;
                                                                                                                Gaps
```

N

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9:
     11111111
76543210987654321
                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 80
                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length:
                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST:*
1: em_
2: em_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13736207 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    October 27,
    atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                     em_estro:*
em_htc:*
                                                                                                                                                                                                                                                                                                            em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                   gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                           gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                            em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_estba:*
                                                                                                                                                                                                                                                                                                                                                         gb_gss:*
                                                                                                                                                                                                          Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002, 15:09:08; Search time 962.107 Seconds (without alignments) 6775.784 Million cell updates/sec
                                              6748477542 residues
 BG240789
BE356895
BE355894
BF176742
BF176742
BG053290
BF566874
BG033591
BG033591
BG033591
BG033591
BG033591
BG033591
BG033591
BG033591
BG713844
BG713846
BF567805
BE356800
BG102589
AWG102589
AWG102589
BE360866
                                                                                                                                                                                                          ij
                                                                                                                                                                                                                                            SUMMARIES
BG240789 OV1_38_CO
BG356895 OV2_11_ED
BG356895 OV2_11_ED
BE355894 DG1_11_E1
BF176742 EM1_4_F01
BG052290 RHIZ2_12_BF56874 FM1_32_16_BG053914 RHIZ2_16_BG053914 RHIZ2_16_BG713844 EM1_20_CO
BF587805 FM1_40_GO
BG673858 FM1_20_CO
BE356763 DG1_12_E1
BG356800 DG1_12_E1
BG356800 DG1_12_E1
BG356800 DG1_12_E1
BG356806 DG1_67_A0
BF367846 LG1_359_D
BE356806 DG1_67_A0
BF36806 DG1_67_A0
                                                                                                                                                                                                        Description
```

C	O	O			C	Ω	O			O	O	O		a	O	O		Ω		Q	O	G		O	C		
45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
5	35.6	5	<u>ب</u>	5	35.8	36	ς.	6	σ.	36.2		σ.	36.8	37	37.2	37.4	37.4	7.	37.8	7.	37.8	38	38	40	40	40.4	42
7.4	7.4	7.4	7.4	7.4	7.4	7.5	7.5		7.5		7.5		7.6	7.7			•	7.8	7.8	٠		٠	7.9			8.4	8.7
685	653	586	467	682	217	1058	789	663	647	595	1043	1101	446	908	514	1101	350	1344	925	826	595	1101	910	768	513	548	649
9	10	10	9	10	10	10	9	10	10	12	10	9	9	10	10	12	10	10	12	10	10	12	12	12	9	10	10
AU130542	BE293240	BF978932	AU182484	BE593319	BM445199	BG295311	AU125061	BJ003303	вJ003370	вн478914	BG104511	AL513871	AU182544	BF253465	BG320949	CNS017SY	BG052289	BE964680	CNS0091P	в1522679	BI607335	CNS0100Y	CNS006ON	AQ690676	AV430609	вм328366	BE355895
AU130542 AU130542	BE293240 601143811		AU182484 AU182484			BG295311 602392604	AU125061 AU125061		_	BH478914 BOGMR38TF	BG104511 602311153		AU182544 AU182544	BF253465 HVSMEf000		AL108460 Drosophil		_	AL053013 Drosophil	-			AL065629 Drosophil	AQ690676 nbxb0082B	AV430609 AV430609	BM328366 PIC1_28_D	BE355895 DG1_11_E1

ALIGNMENTS

```
RESULT 1
BG240789
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION KEYWORDS
                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sorghum.

Sorghum bicolor

Sorghum bicolor

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Epermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC

clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 238)

1 (bases 1 to 238)
                                                                                                                                                                                                                                                                                                                                                                 Tel:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
BG240789
                                                                                                                                                                                        Seq primer: PolyTMix
High quality sequence start: 3
High quality sequence stop: 230
                                                                                                                                                                                                                                                        Email: nmpratteuga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
is 20
                                                                                                                                                                                                                                                                                                                                                                                   The University of Georgia
Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG240789 238 bp mRNA linear EST 15-OV1_38_C06.gl_A002 Ovary 1 (OV1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                             Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An EST database from Sorghum: ovaries of varying immature stages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG240789.1
EST.
/organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="0vary 1 (OVI)"
/note="0rgan: Mix of ovaries of varying immature stages from 8-week-old plants; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made
                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:12775862
                                                                                                                                                                                                                                                                                                                                                                                         Rm.
                                                                                                                                                                                                                                                                                                                                                                                       2502,
                                                                                                                                                                                                                                                                                                                                                                                       Athens,
                                                                                                                                                                                                                                                                                                                                                                                       GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 15-FEB-2001
```

BASE COUNT ORIGIN

```
120 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
"hes 72; Conserv
                                                                              CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 199
                                                                                                    CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGCCACCGGTGCGGTTGTGGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     139 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGCCACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                           Similarity
72; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plant Sciences Bui
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sorghum bicolor
Sorghum bicolor
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 402)
Gingle, A., Marsala, C., Sudman, M. and Prat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence start: 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               An EST database from Sorghum: ovaries of varying Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG356895.1 GI:13238881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG356895
OV2_11_D01.91_A002 Ovary 2 (OV2) Sorghum bicolor cDNA,
                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              il: mmpratt@uga.edu
.primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   University of Georgia
                                                                                                                                                                                                                               /organism="Sorghum bicolor"
/db_kref="taxon:4558"
/clone=lib="Owary 2 (ov2)"
/note="Organ; Mix of ovaries of varying immature stages from 8-week-old plants; Vector: pBluescript II from Lambda from poly-A RNA in the cloning vector lambda ZAP II.

Clones to be sequenced were prepared by mass excision."

82 c 117 g 96 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                               8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from poly-A RNA in the Clones to be sequenced a 54 c 70 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8.7%;
59.0%;
                                                                                                                                                                                0;
                                                                                                                                                                                     Score 42; DB 10;
Pred. No. 0.24;
                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2502, Athens, GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cloning vector lambda ZAP II.
were prepared by mass excision."
51 t
                                                                                                                                                                    50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1
                                                                                                                                                                                                 Length 402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immature stages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-MAR-2001
                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                            RESULT 4
BF176742
                            DEFINITION
                                                                                                                                            Ъ
                                                                                                                                                                              QΥ
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 3
BE355894
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                          198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                      180 TC 181
                                                                                                                                                                          138 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                   60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCGACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                    6-
                                                                                                                                                                                                         TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                             CGGCGAGAAGCTGACCGACTAGGAGGTCGACGAGGATGATCCGTGAGGCTGACGTCGATGG 137
    BF176742
EM1_4_F01.g1_A002 Embryo 1 (EM1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260 CC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence start: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
Sequences have been tri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     below Phred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The University of Georgia Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1s 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE355894.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE355894 419 l
DG1_11_E11.g1_A002 Dark Grown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence.
BE355894
                                                                                                                                                                                                                                                                                                                                                                                                                                            102 a
                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        /Organism="Sorghum bicolor"
/db_xref="taxon:4558"
/db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
//note="Organ: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector:
//note="Organ: 5-day-old dark-grown seedlings; Vector: 5-day-old 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                           8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ave been trimmed to exclude PolyA, vector and regions quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                               Score 42; DB 10;
Pred. No. 0.25;
0; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rm. 2502,
mRNA linear
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            n 1
                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA linear EST 20-JUL-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Athens,
                                                                                                                                                                                                                                                                                                                                   50;
                                                                                                                                                                                                                                                                                                                                                               Length 419;
                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sudman, M.
                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 20-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259
                                                                                                                                                                                                                                                                                                                     0
```

Oy. DЬ NA V

CDNA,

140

60

BASE COUNT ORIGIN

107

FEATURES

source

COMMENT

TITLE JOURNAL

REFERENCE

AUTHORS

ACCESSION VERSION

DEFINITION

KEYWORDS SOURCE

ORGANISM

RESULT 2 BG356895

Dδ Qγ DЪ δÃ

199

င္ပ

200

Д

120

Query Match Best Local S

```
RESULT 5
BG052290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             명
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                  REFERENCE
                                                                                                                 SOURCE
                                                                                                                                   KEYWORDS
                                                                                                                                                   VERSION
                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
  AUTHORS
                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                  178 cc
                                                                                                                                                                                                                                                                                                                                                                                                                                 120 TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                        180 TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCCACCGGTGCGGTTGTGGGCCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                            CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                          sequence.
BG052290
        Sorghum propinquum

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 446)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clade: Panicoideae: Andropogoneae: Sorghum.
1 (bases 1 to 428)
Reid, S. P., Cordonnier-Pratt, M.-M.. Ginale A
                                                                                                                                                                                                            BG052290 446 t
RHIZ2_12_G04.g1_A003 Rhizome2
                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Reid, S.P., Cordonnier-Pratt, M.-M., Gingle, A. and An EST database from Sorghum: developing embryos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF176742.1
                                                                                                                                       EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence start: 32 High quality sequence stop: 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2000
Cordonnier-Pratt, M.-M., Gingle, A.,
                                                                                                             Sorghum propinguum.
                                                                                                                                                       BG052290.1 GI:12506830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLYA-No.
                                                                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             University of Georgia nt Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prepared by mass excision."
80 c 119 g 126 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="Embryo 1 (EM1)"
/note="Organ: Embryos germinated for 24 hr; Vector:
/note="Organ: Embryos germinated for 24 hr; Vector:
pBluescript II from Lambda Zap II; Site_1: xhoI; Site_2:
ECORI; The library was made from poly-A RNA in the cloning
vector lambda ZAP II. Clones to be sequenced were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Sorghum bicolor"
/db_xref="taxon:4558"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:11064652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 42; DB
Pred. No. 0.25
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rn
.
                                                                                                                                                                                                                                gd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2502, Athens,
                                                                                                                                                                                                          op mRNA linear EST 2
(RHIZ2) Sorghum propinquum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 25;
Paterson, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30602-7271,
Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                CDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT 6
BF586874
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180 TC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 CGACGCCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCCAAGTGAGGAGCGGT 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCCACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ိုင္ပင
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                               Sorghum propinguum.
Sorghum propinguum
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 500)
                                                                                                                                                                      Department of Botany
The University of Georgia
Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
72; Conserv
High quality sequence start: 8 High quality sequence stop: 495
                                                                        Email: mmpratt@uga.edu
Sequences have been trimmed
below Phred quality 16. The
                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                           Cordonnier-Pratt, M.-M., Gingle, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF586874.1 GI:11679198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       propinguum cDNA, mRNA sequence.
BF586874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF586874 500 bp mRNA linear EST 12 FM1_31_E06.g1_A003 Floral-Induced Meristem 1 (FM1) Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              High quality sequence start: 11 High quality sequence stop: 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The University of Georgia Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               An EST database from Sorghum: Unpublished (2000)
                                  Seq primer: PolyTMix
                                                                                                                                                                                                                                                                       An EST database from Sorghum:
                                                            is 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                     706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizome2; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 81 c 124 g 140 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42; DB 10
Pred. No. 0.25;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                            Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rm.
                                                                        to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                            2502, Athens, GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2502, Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sorghum
                                                                                                                                                                                                                                                                           floral-induced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                             Sudman, M., Marsala, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GA 30602-7271, USA
                                                                                                                                                                                                                                                                           meristems
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 12-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
BG053591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δδ
                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 TGCCGGCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTGGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      209 CC 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGCCACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                              High quality sequence start: 95
High quality sequence stop: 507
                                                                                                                                                                                                         The University of Georgia
Plant Sciences Building, F
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                  Email: mmpratt@uga.edu
Seq.primer: T7
                                                                                                                                                                                                                                                                                                                            Sorghum propinguum
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGACGCCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 148
                                                                                                                                                                                                                                                                            Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                   Department of Botany
                                                                                                                                                                                                                                                                                                     An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                   Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A., Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum propinguum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG053591
RHIZ2_11_C03.g1_A003 Rhizome2
                                                                                                                                                                                                                                                                                                                                                                                                                                               BG053591.1 GI:12509440
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLYA-No.
   /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/clone_fib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizomes; Vector: pBluescript II from Lambda 2ap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Sorghum propinquum"
/db_xref="taxon:132711"
/clone_lib="Floral-induced Meristem 1 (FM1)"
/clone_lib="Floral-induced Meristems; Vector:
/clone="Organ: Floral-induced meristems; Vector:
PBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
ECORI; mature plants were placed in a growth chamber for induced by short-day conditions); l6 days after being is induced by short-day conditions); l6 days after being is late April/early May, meristems were harvested The lambda ZAP II. Clones to be sequenced were prepared by
lambda ZAP II. Clones to be sequenced were prepared by
lamss excision."

141 g 154 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                              Rm. 2502, Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 42; DB 10;
Pred. No. 0.27;
0; Mismatches 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141 g
                                                                                                                                                                                                                                                                                          Sorghum propinguum rhizomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (RHIZ2) Sorghum propinguum cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50;
                                                                                                                                                                                                                    GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 500;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 25-JAN-2001
                                                                                                                                                                                                                                                                                                                   and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
DЪ
                     Qy
                                                      Д
                                                                               Qy
                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                       ć
                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                         Matches
                                                                                                                          Best
                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 8
BG053014
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                          source
                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
```

```
181 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCCAAGTGAGGAGCGGT
                      121 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                     60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174 cc 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180 TC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCGCCACCGGTGCGGTTGTGGGGCGGTGT 119
                                                                                                                                Similarity 59.072; Conservative
                                                                                                                                                                                                                                                                                                                                                         High quality sequence start: 42
High quality sequence stop: 527
                                                                                                                                                                                                                                                                                                                                                                                       Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                The University of Georgia
Plant Sciences Building, Rm.
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                       POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An EST database from Sorghum: Sorghum propinguum rhizomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sorghum propinguum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pacciade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum propinguum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG053014.1 GI:12508270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG053014 531 k
RHIZ2_16_D04.gl_A003 Rhizome2
                                                                                                                                                                                                             122 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
72; Conserv
                                                                                                                                                                            /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizome2 (Vector: pBluescript II from Lambda Zap II, Site_1: XhoI; Stte_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda Zap II.
clones to be sequenced were prepared by mass excision."
a 101 c 152 g 154 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                             8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clones to be sequenced were prepared 92 c 142 g 164 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8.7%;
59.0%;
                                                                                                                      Score 42; DB J
Pred. No. 0.27;
0; Mismatches
                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    531 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                2502, Athens, GA 30602-7271,
                                                                                                                                     DB 10; Length 531;
0.27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (RHIZ2) Sorghum propinguum cDNA, mRNA
                                                                                                                        50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10;
0.27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 25-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

V

```
RESULT 10
BF587805
                                                                                                                                                          Š
                                                                                                                                                                                              ₽
                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 9
BG713844
                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Sin
Matches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                             180 TC
                                                                                                                                                                                                152
                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 CC
                                                                                                                                                                                                                                                               92 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 151
                                                                                                                                                                                                                                                                                             60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGGCGGTGT 119
                                                                                                                                ဂ္ဂ
                                                                                                                                                                                              CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                               TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGGTGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C
BF587805 561 bp FM1_40_G05.gl_A003 Floral-Induced proplinguum cDNA, mRNA sequence. BF587805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Reid, S.P., Cordonnier-Pratt, M.-M., Gingle, A. and An EST database from Sorghum: developing embryos Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG713844 5
EM1_20_C08.g2_A002 Embryo
                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence start: 62
High quality sequence stop: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoldeae; Andropogoneae; Sorghum.

1 (bases 1 to 537)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG713844.1
                                                                                                                                213
                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           University of Georgia
nt Sciences Building, Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            prepared by mass excision."
98 c 152 g 169 t
                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: Embryos germinated for 24 hr; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Embryo 1 (EM1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                           8.7%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:14007794
                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                             Score 42; DB 10;
Pred. NO. 0.27;
0; Mismatches 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                537 bp
o 1 (EM1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2502, Athens, GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA linear EST 08-MAY-2001
Sorghum bicolor cDNA, mRNA
                              Meristem
                                                mRNA
                                                                                                                                                                                                                                                                                                                             50;
                                                                                                                                                                                                                                                                                                                                                          Length 537
                             linear
1 (FM1)
                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pratt, L.H.
                              Sorghum
                                            EST 12-DEC-2000
                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                               Вb
```

```
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL COMMENT
                                                                                 SOURCE
ORGANISM
                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                     RESULT 11
BG673858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                               Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                  322 CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180 TC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120 TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Department of Botany
The University of Georgia
Plant Sciences Building, Rm
Tel: 706 542 1865
Fax: 706 542 1805
                                                                                                                                                                     sequence.
BG673858
BG673858.1
sorghum.
Sorghum bicolor
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF587805.1 GI:11680115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: mmpratt@uga.edu
Sequences have been trimmed
below Phred quality 16. The
                                                                                                                                                                                                                                                             BG673858
EM1_20_C08.g1_A002 Embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . Similarity 59.072; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Trachv
Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae;
clade; Panicoldeae; Andropogoneae; Sorghum.
1 (bases 1 to 561)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorghum propinguum sorghum propinguum
                                                                                                                                               EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence start: High quality sequence stop: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POLYA=No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cordonnier-Pratt, M.-M., Gingle, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Floral-Induced Meristem 1 (FM1)"
/clone_lib="Floral-Induced Meristems; Vector:
/note="Organ: Floral-induced meristems; Vector:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
pBluescript II; Site_1: XhoI; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Sorghum propinguum"
/db_xref="taxon:132711"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 42; DB 10;
Pred. No. 0.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rm .
                                                                                                                                                                                                                                                                                               577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X
                                                                                                                                                                                                                                                                1 (EM1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 81
561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to exclude
threshold f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        floral-induced meristems
                                                                                                                                                                                                                                                             Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sudman, M., Marsala, C.
                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for highest quality sequent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 561;
                                                                                                                                                                                                                                                          linear
bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30602-7271,
                                                                                                                                                                                                                                                                cDNA, mRNA
                                                                                                                                                                                                                                                                                            EST 01-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
REFERENCE
AUTHORS
                                                                                                      COMMENT
                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                       RESULT 12
BE356763
                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                      241 CC 242
                                                                                                                                                                                                                                                                                                                                                                                         181 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT 240
                                                                                                                                                                                                                                                                                                                                                                                                        120 TGCCGGCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTGTCGATGGCCATGGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                          121 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
An EST database from Sorghum: dark-grown seedlings Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
Fax: 706 542 1805
                                                                                                      Sorghum bicolor
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoldeae; Andropogoneae; Sorghum.
1 (bases 1 to 582)
1 (bases 1 to 582)
1 (bases 1 to 582)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGGCCACCGGTGCGGTTGTGGGGCGGTGT 119
                                                                                                                                                                                                                                                         BE356763
582 bp mrNA linear EST 20-JUL-2000
DG1_12_B12.g1_A002 Dark Grown 1 (DG1) Sorghum bicolor cDNA, mrNA
                                                                                                                                                                                                                                          BE356763.1 GI:9298320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 59.0
72; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The University of Georgia
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 577)
Reid,S.P., Cordonnier-Pratt,M.-M., Gingle,A. and Pratt,L.H.
An EST database from Sorghum: developing embryos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clade; Panicoideae; Andropogoneae; Sorghum.
1 (bases 1 to 577)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Organism="Sorghum bicolor"
/db_xref="taxon:4558"
/db_xref="taxon:4558"
/clone=lib="Embryo] (EM1)"
/note="Organ: Embryos germinated for 24 hr; Vector: Belluscript II from Lambda Zap II; Site_1: XhOI; Site_2: Vector lambda ZaP II. Clones to be sequenced were a 106 c 166 g 176 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.78;
59.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; DB J
Pred. No. 0.28;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10; Length 577;
0.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                            FEATURES
                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
BE356800
                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             333 CC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                    EST.
```

```
AL.H.
An Takabase from Sorghum: d. Unpublished (2000)
Contact: Cordonnier-Pratt MM
The University of Georgia
Plant Sciences Building, Rm. 2:
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     273 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGGGGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCCGCCACCGGTGCGGTTGTGGGCGGTGT 119
                                                                                   High quality sequence start: 10 POLYA=No.
                                                                                                                             Seq primer: PolyTMix
                                                                                                                                                          Sequences have been trimmed below Phred quality 16. The
                                                                                                                                                                                 Email: mmpratt@uga.edu
Sequences have been trj
                                                                                                                                                                                                                                                                                                                                      Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                  Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; Paccidede; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE356800
DG1_12_E10.g1_A002 Dark Grown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE356800.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 6
High quality sequence stop: 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratteuga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
/organism="Sorghum bicolor"
/db_xref="taxon:4558"
                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             145 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhoI; Site_2: EcoRI; The library was
Clones to be sequenced were cloning vector lambda Zap as
Clones to be sequenced were prepared by mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:9298357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42; DB 10; Length 582;
Pred. No. 0.28;
0; Mismatches 50; Indels
                                                                                                                             to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           591 bp mRNA linear EST 20-JUL-2000
3rown l (DG1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                         2502, Athens, GA 30602-7271,
                                                                                                                                                                                                                                                                                                                   dark-grown seedlings
                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
BG102589
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                 Ouery Match
Best Local S
Matches 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                              source
 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 330 CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180 TC 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTTGTGGGCGGTGT 119
                                60
                 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCGCCGCCGGTGCGGTTGTGGGCGGTGT 119
CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum propinquum

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC

Spermatophyta; Magnoliophyta; Corrhum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG102589
RHIZ2_34_H05.g1_A003 Rhizome2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
BG102589
BG102589.1 GI:12617422
                                                                                                                                                                                                                                                                                                                                                                                                              The University of Georgia
Plant Sciences Building, I
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cordonnier-Pratt, M.-M., Gingle, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clade; Panicoideae; Andropogoneae;
1 (bases 1 to 597)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum propinquum
                                                                                                                                                                                                                                                                                                                                                                             Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146
                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                           quality sequence start: 59 quality sequence stop: 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                       ø
                                                                                                                                              /organism="Sorghum propinquum"
/db_xref="taxon:132711"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizome2; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 130 c 170 g 148 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Organ: 5-day-old dark-grown seedlings; Vector:
Lambda Zap; Site_1: XhOI; Site_2: EcoRI: The library was
made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 114 c 168 g 163 t
                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="Dark Grown 1 (DG1)"
                                                                                8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                 0
                                                                                Score 42; DB 10
Pred. No. 0.29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 42; DB 10;
Pred. No. 0.29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                           2502, Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bp mRNA linear EST 30-JAN-2001
(RHIZ2) Sorghum propinguum cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Paterson, A.,
                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50;
                                                                   50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    propinguum
                                                                                                 Length 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 591
                                                                                                                                                                                                                                                                                                                                                                                                                                              GA 30602-7271,
                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rhizomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   269
                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
AW672446
LOCUS
                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вb
                                                                        δÃ
                                                                                                        В
                                                                                                                                                                   Дb
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                              399
                                                                                                           339
                                                                                                                                                                     279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             327
                                                                           180
                                                                                                                           120 TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTTGTCGATGGCCATCGGCGGTGCGGT 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  387 CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180 TC 181
                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                  Local
                                            CC
                                                                           TC
                                                                                                                                                                                     CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCGCCACCGGTGCGGTGTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                           CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                     CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                l Similarity
72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
AW672446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cordonnier-Pratt, M.-M., Gingle An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AW672446
LG1_359_D09.g1_A002 Light Grown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequences have been trimmed to exclude below Phred quality 16. The threshold
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: mmpratt@uga.edu
Sequences have been tr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Department of Botany
The University of Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Trache
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
clade; Panicoldeae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sorghum.
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AW672446.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLYA=Yes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: T7
                                              400
                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 598)
                                                                                                                                                                                                                                                                                                              151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        706 542 1860
706 542 1805
                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sciences
                                                                                                                                                                                                                                                                                                       /db_xref="taxon:4558"
/clone_lib="Light Grown 1 (LG1)"
/clone_lib="Light Grown 1 (LG1)"
/note="Organ: 10- to 14-day-old light-grown (greenhouse)
seedlings; Vector: Lambda Zap; Site_1: xhoI; Site_2: Eco
; The library was made from poly-A RNA in the cloning
vector lambda ZAP II. Clones to be sequenced were
prepared by mass excision."

128 c 173 g 146 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Sorghum bicolor"
                                                                                                                                                                                                                                             8.7%;
27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Building,
                                                                                                                                                                                                                               Score 42; DB 9
Pred. No. 0.29;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gingle, A., Marsala, C.
18:34:55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 light-grown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA linear EST 19-JUL-ZUU
1 (LG1) Sorghum bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Athens,
                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                  50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PolyA, vector and regions for highest quality sequence
                                                                                                                                                                                                                                                             Length 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seedlings
                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and Pratt, L.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 19-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tracheophyta;
                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             386
                                                                                                                                                                       338
                                                                                                                                                                                                                                  0
```

Search completed: October Job time: 966.107 secs

Page 8

Run

OM nucleic

.

Title: Perfect score:

sequence sequence

7, Appli
2, Appli
2, Appli
14, Appli
10, Appli
100, App
100, App
100, App
138, App
1

Sequence

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents_NA:*
1: /cgn2_6/ptcdata/2,
2: /cgn2_6/ptcdata/2,
3: /cgn2_6/ptcdata/2,
4: /cgn2_6/ptcdata/2,
5: /cgn2_6/ptcdata/2,
6: /cgn2_6/ptcdata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-677-374-3
483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  383533 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        October 27, 2002, 16:06:08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version
Copyright (c) 1993 - 2002
                                                                       /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/Dackfiles1.seq:*
/cgn2_6/ptodata/2/ina/Dackfiles1.seq:*
      4403765

4962

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

1052

105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                    4 US-08-556-978B-80

4 US-08-556-978B-81

5 4 US-09-103-840A-2

9 4 US-09-103-840A-1

10 4 US-08-765-907A-16

2 US-08-765-907A-16

2 US-08-510-666B-10

3 US-08-510-666B-10

4 US-09-231-818-10

4 US-09-73-816-1

5 4 US-09-103-840A-2

1 US-09-103-840A-1

1 US-08-32-747-1

5 5187077-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
     5427925-22

US-08-378-617A-25

5187077-16

5427925-14

US-09-530-212A-1

US-08-363-208-1

US-09-137-478-1

US-09-137-478-1

US-08-194-290-6

US-08-614-377A-6

US-09-142-648B-6

US-08-804-227C-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Search time 35.3143 Seconds
(without alignments)
3359.570 Million cell updates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.1.3
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    767066
Sequence 80, Appl
Sequence 2, Appli
Sequence 1, Appli
Sequence 10, Appli
Sequence 10, Appl
Sequence 10, Appli
Sequence 10, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 25, Appli
Patent No. 5187077
Sequence 25, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 6, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cell updates/sec
                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
US-08-556-978B-80
                                                                                                                  PRIOR APPLICATION DATA

APPLICATION UNBER: 08/077,600

PILING DATE: JUNE 15, 1993

ATTORNEY/AGENT INFORMATION:

NAME: FLOYD, LINDA AXAMETHY

REGISTRATION NUMBER: 33,692

REFERENCE/DOCKET NUMBER: CR-9389-A

TELECOMMUNICATION INFORMATION:

TELEPHONE: 302-892-8112

TELEPAX: 302-713-0164

INFORMATION FOR SEQ ID NO: 80:
SEQUENCE CHARACTERISTICS:
LENGTH: 303 base pairs

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: DNA (genomic)

US-08-556-9788-80
                                                                                                                       US-08-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         იიი
                                                     Query Match
Best Local Similarity
Matches 66; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 80, Application US/08556978B Patent No. 6268169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: FAHNESTO
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: MICROSOFT WO CURRENT APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
COMPUTER: IBM PC COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: E. I. DU PONT DE NEMOURS AND COMPANY
STREET: 1007 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 1007 MARI
CITY: WILMINTON
STATE: DELAWARE
COUNTRY: UNITED:
ZIP: 19898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS
SOFTWARE: MICROSOFT WORD FOR WINDOWS
                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
CLASSIFICATION: 435
     85 GTTGGCGCGCCACCGGTGCGGTTGTGGGCGGTGTTGCCGGCCACCTGTTCGGTAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNITED STATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FAHNESTOCK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISKETTE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.68;
57.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OCK, STEPHEN F.
NOVEL RECOMBINANTLY
SPIDER SILK ANALOGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/556,978B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.50 INCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-804-227C-7
US-08-804-198-1
US-09-177-349-2
US-09-232-463-14
US-07-918-023-1
US-08-851-843A-100
US-08-854-050-100
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-818-112-133
US-08-9456-556-348
US-08-955-556-38
US-08-955-556-38
US-08-955-556-38
US-08-955-556-38
                                                    Pred. No. 0.04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 95
1 95
                                                                     DB . 043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRODUCED
                                                                                   4 ;
                                                       49;
                                                                                   Length
```

Database

Result

Ž.

Score

0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

თთთთთთთთთთთთთთთთთთთ

Indels

0;

Caps

0

Minimum

Searched:

Total number

Scoring table:

Maximum

DB

seq

В

```
US-09-103-840A-2/c
                                                                                                          RESULT 3
                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                  US-08-556-978B-81
                                                    GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D. APPLICANT: WHITE, Owen R. APPLICANT: FRASER, Claire M. APPLICANT: VENTER, John C.
                                                          Sequence 2, Application US/09103840A
Patent No. 6294328
                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                           INFORMATION POR SEQ ID NO: 8
SEQUENCE CHARACTERISTICS.
LENGTH: 303 base pairs
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147 GCTGGTGCAGCAGCAGCTGCCGCTGCCGGTGCAGGCCAAGGTGGATATGGTGGCT
                                                                                                                                       145 TCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                           TOPOLOGY: 11
                                                                                                                                                                                  85 GTTGGCGCGCCCACCGGTGCGGGTTGTGGCCGGTGTTGCCGGGCCAGCTGTTCGGTAAAGGC 144
                                                                                                                                                                                                                                                                                                                                                                                NAME: FLOYD, LINDA AXAMETHY REGISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-
TELECOMMUNICATION INFORMATION:
TELEPHONE: 302-892-8112
                                                                                                                                                                                                                          Local Similarity 57.4 les 66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: MICROSOFT WORD FOR WINDOWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 0
FILING DATE: JUNE 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                              GCTGCGGCAGCTGGTGGTGCTGGTCAGGGCGGTCTTGGCTCACAAGGGGCCCGGTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: UN
ZIP: 19898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM IIFE.
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS 95
OPERATION SYSTEM WINDOWS 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: WILMINTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              198 GÉTEGTECAGCAGCAGCTGÉCGCTGCCGGTGCAGGCCAAGGTGGATATGGTGGCT 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    145 TCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138 GCTGCGGCAGCTGGTGGTGCTGGTCAGGGCGGTCTTGGCTCACAAGGGGCCGGTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DELAWARE
                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: E. I. DU PONT DE NEMOURS AND COMPANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                   DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FAHNESTOCK, STEPHEN F.
                                                                                                                                                                                                                                      7.6%;
57.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOVEL RECOMBINANTLY PRODUCED
SPIDER SILK ANALOGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08/077,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/556,978B
                                                                                                                                                                                                                                                                                                                                                            81:
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                Score 36.6; DB .
Pred. No. 0.043;
                                                                                                                                                                                                                                                                                                                                                                                                      CR-9389-A
                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                      DB 4; Length 303;
                                                                                                                                                                                                                49; Indels
                                                                                                                    201
                                                                                                                                                                146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             197
                                                                                                                                                                                                           0,
                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
```

В γQ

Ъ

```
Db 2061410 GGGCGCCGGTGGGCTCGGCGGCAAAGCCGGGCTGATCGGCGACGGCGGTGACGGCGGCGCC 2061351
                                                                                                          Query Match
Best Local Similarity
Matches 90; Conserve
                                                                                                                                                                                                                                           ; ORGANISM: Mycobacterium tuberculosis
OTHER INFORMATION: H37Rv
US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                         SOFTWARE: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-103-840A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db 2884584 AAAAGCGGTGGGCGCGATGTTGACCTCGATGA 2884553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db 2884644 GAGTCGGGCCAGGCGCGCTTGTTGATACAGGGTTTCCAGCTGTTGCCGTTGTTCTGCAAA 2884585
                                                                                                                                                                                                                                                                                                                 APPLICANT: WHITE, OWEN R.
APPLICANT: WHITE, OWEN R.
APPLICANT: WHITE, OWEN R.
APPLICANT: YENSER, Claire M.
TITLE OF INVENTION: DAN SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
NUMBER OF SEQ ID NOS: 2
NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pateurice 1, Application US/09103840A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-103-840A-2
                           159 GATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCAT 218
                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                        LENGTH: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 51.3%;
Matches 78; Conservative
                                                                         99 CGGTGCGGTTGTGGGCGGTTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTC 158
                                                                                                                                      39 CTCTGTTTTCCTGGTGGGTTGGGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCAC 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Ver. 2.1 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: DNA SEQUENCES FOR STRAITITLE OF INVENTION: TUBERCULOSIS CURRENT APPLICATION NUMBER: US/09/103,840A NUMBER OF SEQ ID NOS: 2 CORPUNDED: DRAFT: 1998-06-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202 AAAATCGGTCAGAGCATGGACCAGCAGGATAA 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142 GGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCCGGTCTGATTGGCTCT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 4403765
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82 GAAGTTGGCGCGGCGACCGGTGCGGTTGTGGGGGGGTGTTGGCGGCCAGCTGTTCGGTAAA 141
                                                                                                                                                                                       Conservative
                                                                                                                                                                                                 48.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : CDC 1551 : "n" bases at various positions throughout the sequence : represent a, t, c or {\bf g}
                                                                                                                                                                                                                  7.0%;
                                                                                                                                                                                       0;
                                                                                                                                                                                              Score 33.6;
Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 33.6; DE Pred. No. 18; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOR STRAIN ANALYSIS IN MYCOBACTERIUM
                                                                                                                                                                                                      DB 4;
                                                                                                                                                                              94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4; Length 4403765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74;
                                                                                                                                                                                                 Length 4411529;
                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

٠,

B Ş

2061290 GGTC 2061287

219

GGAC

222

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-403-852D-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-765-907A-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-765-907A-16/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 10, Application US/08403852D Patent No. 5891695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 16, Application US/08765907A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. 6352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Streptogramins and Method For Preparing TITLE OF INVENTION: Mucasynthesis FILE REFERENCE: Streptogramin genes CURRENT APPLICATION NUMBER: US/08/765,907A CURRENT FILING DATE: 197-03-20 NUMBER OF SEQ ID NOS: 17 NUMBER OF SEQ ID NOS: 17 NUMBER OF SEQ ID NOS: 17 NUMBER PATENTING 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: BLANC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 962
TYPE: DNA
ORGANISM: Streptomyces pristinaespiralis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Debissche, Laurent
APPLICANT: De Crecy-Lagard, Valerie
TITLE OF INVENTION: Polypeptides Inv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135 CGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGT 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        243 CGGCCAGGCAGGTCCGAGGTCCCCCGGGGCGACCTGGCAGCGTGGGCGGCCAGCAGCC 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183 GGGTGTCGGCCCGGGCGCGTCGGCGGTGATCCCGGCGCGGTCAGCTGCCCGGT 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75 CCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTGTTGCCCGGCCAGCTGTT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 6.9%;
Local Similarity 55.7%;
                                                                                              COUNTRY:
                                                                                                                                          STATE:
                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64;
                                                                       RY: USA
20005-3315
                                                                                                                                                              Washington
                                                                                                                                D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PARIS, Jean-Marc
DUTRUC-ROSSET, Gilles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BARRIERE, Jean-Claude
DEBUSSCHE, Laurent
FAMECHON, Alain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLANCHE, Fra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THIBAUT, Denis
BAMAS-JACQUES, Nathalie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THIBAUT,
                                                                                                                                                                                                E: Finnegan, Henderson, Farabow, Garrett & Dunner
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Crouzet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Thibaut, Denis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jacques,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zagorec, Monique
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blanche, Francis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Blanc, Veronique
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jacroix,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Veronique
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Francis
                                                                                                                                                                                                                                                                                                                       Polypeptides Involved In The Biosynthesis Of Streptogramins, Nucleotide Sequences Coding For These Polypeptides And Their Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patricia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Joel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nathalie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 33.4; DB Pred. No. 0.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 962;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ву
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                US-08-510-646B-10/c
                                                                                                                                                                                                                                                                                                                                               RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-403-852D-10
                                                                                                                                                                                                                                                                                                                 Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (202) 408-44 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 03806.0054-00000
TELECOMMUNICATION INFORMATION:
                                                                                    APPLICANT: De Crecy-Lagard, Valerie
TITLE OF INVENTION: Polypeptides Involved In The
TITLE OF INVENTION: Blosynthesis Of Streptogramins,
TITLE OF INVENTION: Coding For These Polypeptides Ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 25-SEP-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                           CORRESPONDENCE
                                                                                                                                                       APPLICANT:
                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                183
                                                                                                                                                                                                                                                                                                                                                                                                                              135 CGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGT 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                             243 CGGCCAGGCAGGTGTCGAGGTCCCCCGGGGCGACCTGGCCAGCGTGGGCGGCCAGCAGCC 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75 CCGCCAGGAAGTTGGCGCGCCACCGGTGCGGTTGTGGGGGGGTGTTGCCGGCCAGCTGTT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: 84..962 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
           CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/
FILING DATE: 25-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 10-MA
                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS: double
                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENGTH:
                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                               GGGTGTCGGCCCGGGCGCGTCGGCGGTGATCCCCGGCGCCGGTCAGCTGCCCGGT 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64.
                                                                                                                                                                                                                                                                                                  0, Application US/08510646B
D.C
                             1300 I Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1052 base pairs
                                                                                                                                                                                                                   Jacques,
                                                                                                                                                                                     Thibaut,
                                                                                                                                                                                                                                     Crouzet,
                                                                                                                                                                                                                                                 Blanche,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0,
                                                                                                                                                                        Zagorec,
                                                                                                                                                                                                                                                                   Blanc, Veronique
                                                                                                                                                       Debussche, Laurent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S.pristinaespiralis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                            Finnegan, Henderson, Farabow, 00 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO
                                                           ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.9%;
55.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              408-4000
                                                                                                                                                                      Monique
                                                                                                                                                                                     Nathalie
Patricia
Denis
                                                                                                                                                                                                                                     Joe
                                                                                                                                                                                                                                                  Francis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "Gene PapM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT/FR 93/00923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FR 92/11441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/403,852D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 33.4; DB Pred. No. 0.71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version #1.30
                                            Garrett & Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                         And Their Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

0

ZIP: 20005-3315
MPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

```
RESULT 8
US-09-231-818-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 10
Patent No.
                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Blanc, Veronique
APPLICANT: Blanche, Francis
APPLICANT: Crouzet, Joel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-510-646B-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 55.7%;
Matches 64; Conservation
                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183 GGGTGTCGGCCCGGGCGGCGGTCGGCGGTGATCCCGGCGGCCGGTCAGCTGCCCGGT 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        135 CGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGT 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243 CGÉCCAGGCAGGTGTCGAGGTCCCCCGGGGCGACCTGGCAGGCGTGGGGGGGCGGCCAGCAGCC 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
TYPE:

102) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
1082) 408-44(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: CDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75 CCGCCAGGAAGTTGGCGGCGCGCCACCGGTGCGGTGTGTGGGCGGTGTTGCCGGGCCAGCTGTT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US
FILING DATE: 03-AUG-19
CLASSIFICATION: 435
PRIOR APPLICATION DATA;
APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: CDS
LOCATION: 84..962
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 03806.0054-01000
TELEPHONE: (202) 408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 9
FILING DATE: 25-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: S.pristinaespiralis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 10-MAY-1
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: doub
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                             10, Application US/09231818
5. 6171846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/I
                                                                                                                                               INVENTION:
Zagoreu, Fourant
Debussche, Laurent
De Crecy-Lagard, Valerie
VENTION: Polypeptides Involved in The
VENTION: Biosynthesis of Streptogramins, Nucleotide Sequences
VENTION: Coding For These Polypeptides And Their Use
                                                                                                                                                                                                                  Thibaut, Denis
Zagorec, Monique
                                                                                                                                                                                                                                                                                              Jacques, Nathalie
                                                                                                                                                                                                                                                                       Lacroix, Patricia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Meyers, Kenneth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1052 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product= "Gene PapM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FR 92/11441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/FR 93/00923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . US 08/403,852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/510,646B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 33.4; DB 3; Length 1052; Pred. No. 0.71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
GENERAL INFORMATION
APPLICANT: BLANC,
APPLICANT: THIBAL
                                                                                                                            RESULT 9
US-08-765-907A-1/c
                                                                                                                                                                                      В
                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                            δÃ
                                                                                               Sequence 1, Application US/08765907A
Patent No. 6352839
                                                                                                                                                                                                                                                                                                                  NAME/KEY: CDS
LOCATION: 84..962
OTHER INFORMATION: /Product= "Gene Papm"
                                APPLICANT:
                                             APPLICANT:
                                                          APPLICANT:
                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PILING DATA:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US/08/403,852

FILING DATE: 10-MAY-1995

FILING DATE: 25-SEP-1993

PRIOR APPLICATION DATA:

ADDITION DATA: FR 92/11441
                                                                                                                                                         183 GGOTGTCGGCCCGGGCGGCGGTCGGCGGTGATCCCGGCCGGTCAGCTGCCCGGT 129
                                                                                                                                                                               135 CGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGT 189
                                                                                                                                                                                                      TELEFAX: (202)
                                                                                                                                                                                                                                                                                                                                                                                                   ORIGINAL SOURCE:
                                                                                                                                                                                                                        75 CCGCCAGGAAGTTGGCGGGGGGCACCGGTGCGGTTGTGGGGGGGTGTTGGCGGGCCAGCTGTT 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 1052 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                HYPOTHETICAL: N
                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 03/
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: S.pristinaespiralis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
                                                                                         INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 4:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                    BLANC, Veronique
THIBAUT, Denis
BAMAS-JACQUES, Nathalie
BLANCHE, Francis
COUZET, Joel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
BARRIERE, Jean-Claude
DEBUSSCHE, Laurent
                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3: Finnegan, Henderson, Farabow, Garrett & Dunner
1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                            Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             double
                                                                                                                                                                                                                                                                            6.9%; Score 33.4; DB 55.7%; Pred. No. 0.71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/09/231,818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03806.0054-00000
                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                  _DB 4; Length 1052;
                                                                                                                                                                                                                                                                51;
                                                                                                                                                                                                                                                             Indels
```

0

٦,

```
õ
                                                                     В
                                                                                                   Ş
                                                                                                                                      밁
                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-773-816-1
 밁
                                                                                                                                                                                                                                                                                  US-09-773-816-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us-08-765-907A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/09773816 Patent No. 6340774
                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                             ORGANISM: Human
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(23623)
OTHER INFORMATION: n = A.
                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 1 \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Streptogramins and Method For Preparing Same FILE REFERENCE: Streptogramin genes CURRENT APPLICATION NUMBER: US/08/765,907A CURRENT FILING DATE: 1997-03-20 NUMBER OF SEQ ID NOS: 17 SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/773,816
CURRENT FILING DATE: 2001-06-08
PRIOR APPLICATION NUMBER: US 60/243,458
PRIOR FILING DATE: 2000-10-25
PRIOR APPLICATION NUMBER: US 60/179,305
PRIOR APPLICATION NUMBER: US 60/179,305
PRIOR FILING DATE: 2000-01-31
NUMBER OF SEQ ID NOS: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Stanford University
APPLICANT: Khosla, Chaitan
TITLE OF INVENTION: NON-STEROIDAL
TITLE OF INVENTION: ANTAGONISTS
FILE REFERENCE: 28600-20210.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 2888
TYPE: DNA
ORGANISM: Streptomyces pristinaespiralis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
 8386
                                                                                                                                                                                                                                                                                                                                                                                                      ENGTH:
                                                                                                                                          8266 GGGTTCGGCGATGACGTCGCACAGGGTCGCGAAGGACGCCGCGACGCCGTAGGT 8325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135 CGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGT 189
                                                                                                     115 GGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGT 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75 CCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTGCTGGTGGGCGGTGTTTGCCGGCCAGCTGTT 134
                                                                                                                                                                         55 GGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCCGCCACCGGTGCGGTTGTGGGC 114
                                  GCGGTTCTGGGCGGTCTGATTG 196
GCTGGTCTTGGCCATCTGCATG 8407
                                                                     GGGGTCGGTGACCAGCGAGATGGTCAACACGCCGGCCTCGTCCAGTTGCCCGAGGGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64;
                                                                                                                                                                                                                                                                                                                                                                                                      23673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PARIS, Jean-Marc
DUTRUC-ROSSET, Gilles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FAMECHON, Alain
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                           6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.9%;
55.7%;
                                                                                                                                                                                                                                                                                                 A,T,C or
                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                          Score 33.2; D
Pred. No. 3.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 33.4; Di
Pred. No. 1.1;
                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESTROGEN-RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4;
                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                           68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51;
                                                                                                                                                                                                                                              Length 23673;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2888;
                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ву
                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                     8385
                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
Ş
                                                                                                                                                                                                                                                  APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: WRASER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/99/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γ
                                                                                                                                         ; ORGANISM: Mycobacterium tuberculosis ; OTHER INFORMATION: H37Rv US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 835437 GCGCCGCGTCCATAACCAGTCCGCTGCTCGACGCGATCAACGCGCCCTTCCTGGCGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
                                                             Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09103840A Patent No. 6294328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application Patent No. 6294328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                            SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: DNA SEQUENCES FOR STRA.
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: FLEISCHMAN, Robert D. APPLICANT: WHITE, Owen R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     835557 GGGCCGGCGATTGTTCGGCAACGGCGCGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 835497 TGGGGCGCCCGCTGATCGGTAACGGCGCCGACGGGGCCGCCGGGGCCGGGGCCGCCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: FRASER, Claire M. APPLICANT: VENTER, John C.
                                                                                                                                                                                                 LENGTH: 4411529
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: CDC 1551
OTHER INFORMATION: "n" bases at various positions throughout the sequence OTHER INFORMATION: represent a, t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 TTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGG 178
59 GCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGGGCGCCACCGGTGCGGTTGTTGGGCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59 GCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80;
                                                             80; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/09103840A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50.6%;
                                                                            50.6%;
                                                         Score 33.2; D
Pred. No. 23;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 33.2;
Pred. No. 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                               FOR STRAIN ANALYSIS IN MYCOBACTERIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FOR STRAIN ANALYSIS
                                                                                                DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       835594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78;
                                                             78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4403765;
                                                                                                  Length 4411529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IN MYCOBACTERIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                             0
```

Db 833379 GGGCCGGCGATTGTTGTTCGGCAACGGCGCGCCCGGCC 833416

TTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGC 216

Db 833319 TGGGGCGCCCGCTGATGGGTAACGGCGCCGACGGGGCGCCGGGGACCGGGGGCCGCCGGCG 833378

TTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGG 178

833259 GCGCCGCGTCCATAACCAGTCCGCTGCTCGACGCGATCAACGCGCCCTTCCTGGCGGCGT 833318

```
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Saln
US-08-332-747-1
                                Ъ
                                                          Ş
                                                                          Query Match
Best Local Similarity
Matches 63; Conserv
                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/332,747
FILING DATE: 01-NOV-1994
CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: DE 43 37 295
FILING DATE: 02-NOV-1993
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 33,302
REFERENCE/DOCKET NUMBER: 33,302
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-243-6333
                                                                                                                                                                                                                                                                                    TELEFAX: 703 243-6410
TELEX: 64191
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, \
CURRENT APPLICATION DATA.
942 TTGGCGCTATCGGCGGCGCGCGTGTTGGGCGGATTCCTCGGCAACACTATCGGCGGCGGTA 883
                                                                                                                                                                                       TOPOLOGIC TYPE: DN
                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 1295 base pairs
TYPE: nucleic acid
               86 TTGGCGCGGCCACCGGTGCGGTTGTGGGGGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCT 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/08332747 Patent No. 5733724
                                                                                                                                                                                                                STRANDEDNESS: doi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -08-332-747-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Schubert, Peter
APPLICANT: Neumann, Siegfried
TITLE OF INVENTION: Oligonucleotides for the detection of
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS: ADDRESSEE MILLEN, WHITE, ZELANO & BRANIGAN
STREET: 2200 CLARENDON BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: US
ZIP: 22201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٧A
                                                                                                                                           Salmonella sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Goetz, Werner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goebel,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ludwig, Albrecht
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bubert,
                                                                                                                                                                                                  DNA (genomic)
                                                                                                                                                                                                                                double
                                                                                        55.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Andreas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Release #1.0, Version #1.30 (EPO)
                                                                          0;
                                                                Score 33; DB 1;
Pred. No. 1;
0; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                     MERCK 1628
                                                                  50;
                                                                                      Length 1295;
                                                            Indels
                                                       0;
```

```
рβ
                                                       Qγ
                                                                                   В
                                                                                                                                                                                                                                                                                     RESULT 15.
5427925-3/G;
Patent No. 5427925
; Patent No. 5427925
; DOUGLAS J; KING, DAVID P; GOUGH, NICHOLAS M; HILTON, DOUGLAS J; KING, JULIE A; METCALF, DONALD; NICE, EDOUARD C; NICOLA, NICOS A; SIMESON, RICHARD J; WILLSON, TRACY A; LEUKEMIA INHIBITOR FACTOR RUMBRIANT METHOD FOR MAKING NUMBER OF SEQUENCES: 38
                                                                                                                                                                                         5427925-3
                                                                                                                 SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ДЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5187077-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
5187077-4/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: GEARING, DAVID P., GOUGH, NICHOLAS M., HILTON, INCOLA, HICOS A., SIMPSON, RICHARD J., WILLSON, TRACY A.

NUMBER OF INVENTION: LEUKEMIA INHIBITORY FACTOR A.

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/294,514

FILING DATE: 09-DEC-1988
422 CACAGACGGCAAAGCACATTGCTGAGGAGGCCCCTCATGACGTCTATAGTAGCATTGAGC 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                       482 TCTTTGTCAGAGTGGTCGGGGACAGGTGGCACACGTGGCCCACACGGTACTTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                             32 TCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCG 91
                                                                                                                                                                                                                                 APPLICATION NUMBER: 948,614
FILING DATE: 22-SEP-1992
APPLICATION NUMBER: 667,159
                                                                                                                                                                                                     LENGTH: 535
                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/
FILING DATE: 06-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302 AGGGAGGCGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212 AGAGCATGGACCAG 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 TIGACCIGGAGGCTCACGGCAGIGGGGTTCAGGACCITCTGGTCCCGGGTGATAITGGTC 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152 GTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTC 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        422 CACAGACGGCAAAGCACATTGCTGAGGAGGCCCCTCATGACGTCTATAGTAGCATTGAGC
                         CGGCCACCGGTGCGGTTGTGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTC 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482 TOTTTGTCAGAGTGGTCGGGGACAGGTGGCACACACGGTACTTGTTG 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92 CGGCCACCGGTGCGGTTGTGGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTC 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32 TCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCAGAACTTCAGCCGGCCAGGAAGTTGGCG 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        al Similarity 47.9%; Score 32.4; D
93; Conservative n. w: [7]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5187077
                                                                                                                                                                                                                          11-MAR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                      6.7%;
47.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                          0;
                                                                                                             Score 32.4; DB 6; Length 5: Pred. No. 1.1; o; Mismatches 101; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 6;
                                                                                                                                         Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                              0;
                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                       423
                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                    O
                                                       O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
         4 W W B C B B
                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                     108.4
102
                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq
                                                                                                                                                                                                                                                                                              N_Geneseq_032802:*

| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1985.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length: 0
length: 2000000000
                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         October 27, 2002, 14:35:03; Search time 122.627 Seconds (without alignments) 6762.541 Million cell updates/sec
      100.0
100.0
61.1
61.1
24.4
22.4
21.1
19.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-677-374-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                             Length
      768
486
489
118
110
102
                                                                                                                                                               В
      IJ
    AAF86247
AAF86246
AAF96246
AAF86254
AAF86254
AAF86255
AAF86255
AAF86253
AAF86253
                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3472872
DNA sequence of E.
DNA sequence of cl
OSPA 17kD antigen
Piscirickettsia sa
PCR primer #4 used
PCR primer #5 used
PCR primer #3 used
PCR primer #3 used
PCR primer #1 used
                                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-SEP-1999;
                                                                 17-MAR-2001.
                                                                                               CA2281913-A1
                                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                       Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                    11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                   AAF86247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAF86247 standard; DNA; 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                  99CA-2281913
                                                                                                                                                                                                                                                                        salmonis
                                                                                                                                                          /partial
/product= "OspA"
                                                                                                                                                                                                             1..483
                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          110
                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВР
```

	_	_	٠٠		Ŭ	•	~	-	٠,	٠.	-	_			Ŭ	_	_	_	•	٠.		_			Ŭ	_	_		•	•	_	~			_
ω.	33.2	ω ·	ω	ω	ω	ω	w	ω	ω	ω	ω	ω	34	34		34.2			(۵)	5	5	5	35.4	5	5	5	5	5	36	36	36	6	36.6	39.4	72.4
	6.9									7.0			7.0	7.0	7.1	7.1				7.3			7.3					7.4		7.5	•		7.6	8.2	15.0
1047	306			411529		49980						810	2652	2652	10855	6273	77536		77536							481	481	92	91	51	05	ဒ	ဌ	2292	5
22	21	22	17	22	22	22	21	22	22	13	22	22	20	20	23	23	21	23	21	21	22	22	19	20	24	22	20	21	22	23	17	16	16	21	S
AAH78614	AAC756	AAS08693	AAT59268	AA199682	AA19968	AAH68532	AAA51625	AAH67598	AAH68529	AAQ20907	AAF68080	AAH66598	AAX23387	AAX23386	ABL15730	ABL15731	AAA14651	AAS59606	AAA14651	AAA51609	AAD17186	AAD17185	AAV36619	AAX61355	ABA90946	AAS59277	AAX90448	AAA45539	AAL37335	ABL03846	AAT31799	AAT18912	AAT189	AAC458	AAFR6256
Nucleotide sequenc	Human ORFX ORF1234	Micromonospora DNA	Streptomyces prist	Mycobacterium tube	Mycobacterium tube	C glutamicum codin	\mathbf{H}	glutamicum	glutamicum	DNA encoding the c	n			Human Delta7-stero	Drosophila melanog	Drosophila melanog	Nucleotide sequenc	Propionibacterium	Nucleotide sequenc	c Gag	Streptomyces nours	ŝ	Nucleotide sequenc	DNA encoding a hum	Human polynucleoti	Human cDNA encodin	secreted		Human musculoskele	sophila mel	throbacter	encoding spid	A encoding spi	abidopsis thal	PCR primer #6 used

ALIGNMENTS

```
RRESULT 1
ARBESTAT
ID RAFE
AC AAFE
AC AAFE
XX PALA
DT 11-J
DT 11-J
DT 11-J
DT SIR
XX PALA
XX P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease, SRS; 17E2; ds.
      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA sequence of E. coli optimised ospA gene 17E2
      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Genus specific 17kDa antigen, the sequence does
not include a stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
```

```
Š
                                                                                                                                                                                밁
                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                         γQ
                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
481
                   481
                                          421
                                                                 421
                                                                                       361
                                                                                                             361
                                                                                                                                  301
                                                                                                                                                         301
                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals, P. salmonis specific antigen termed OspA, or an immunogenic fragment of a particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting apainst salmonid sequence represents DNA which has been optimised for expression in Escherichia coli to encode the P. salmonis OspA protein. An OspA protein anti-cona antipolar partner is used in a vaccine to create an
                                                                                                                                                                                                    241
                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                               Sequence 483 BP; 108
           l AAA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                           Local
483;
                      GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                             CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                 1 ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGC 60
                                                                 CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                             CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                    CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KAYW/)
(BURI/)
                                                                                                                                                                                                                CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGAGATAAAATCAAA
                                                                                                                                                                                                     CTGGGCGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGAGCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                                                          GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTGTT
                                                                                                                                                                                                                                                                                                      ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTGGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-316844/34.
DB; AAB81127.
                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; Fig 4C; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KAY W W.
BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 483; DB 22; 100.0%; Pred. No. 3.9e-136;
                                                                                                                                                                                                                                                                                                                                                                                                                                 A; 127 C; 148 G; 100 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                           Length 483;
                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                  420
                                                                                                               360
                                                                                                                                                          300
                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                 0;
```

RESULT 2

Qy

Conservative

0,

Indels

0,

Gaps

0;

60

1 ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGC

DЪ Qy Дb Qγ DЪ Qy B

```
Query Match
Best Local s
Matches 483
                                                    This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a particularly population of a vaccine. The method is used for protecting animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The present a (SRS) and other rickettsial diseases. The present P. salmonis P. salmonis OSPA DNA termed C17E2 optimised for seguence represents P. salmonis OSPA DNA termed C17E2 optimised for expression in Escherichia coli fused to DNA encoding an undefined is used in a vaccine to create an anti-OSPA antibody response.
                                                                                                                                                                                                                         Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                          (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                               Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                         Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA sequence of c17e2 ospA construct with N-terminal fusion partner.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86248 standard; DNA;
                                                                                                                                                                                                                                                                                                 2001-316844/34.
                    Similarity
                                                                                                                                                                                                                                                                                                                                           KUZYK M A.
                                                                                                                                                                                                                                                                                                                    Burian J,
                                         220 A; 183 C; 190 G; 175 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "DNA
286..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product= "C17E2
/note= "No stop
1..285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Optimised
               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                    Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           മ
                                                                                                                                                                                                                                                                                                                    MA;
Score 483; DB 22;
Pred. No. 4.7e-136;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "C17E2 OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   undefined
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   with N-terminal is given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 construct c17E2
                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fusion partner"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        partner"
```

```
ARESULT 3
AAP8626
ID AAP86
AAP 64626
AC AAF66
AC AAF66
AC AC AC AAF66
AC AC AC AC AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86246
                                                             (KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                          CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OspA 17kD antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF86246
                                                                                                                                                                                         17-SEP-1999;
                                                                                                                                                                                                                                   17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Poikilothermic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-JUL-2001
                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                          ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTCGATGGCCATCGGCGGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGGCGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGC
                                                             KAY W W.
BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; DNA; 486
                        Burian J,
                                                                              ¥.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                         99CA-2281913
                                                                                                                                                                                                                                                      /*tag= a
/partial
/product= "OspA"
/product= "Genus specific 17kDa antigen, the sequence
/note= "Genus specific 17kDa codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease;
                                                                                                                                                  99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                            1..486
                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                        Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    705
                                                                                                                                                                                                                                                                                                                                         does
```

δÃ B Ş

밁

Š

0

Вb

```
Query
Best L
  Matches
                                                                                                          This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents DNA encoding the P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 200
P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                  Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis .
                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 2B; 35pp; English.
                      Local
                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-316844/34.
DB; AAB81126.
                      Similarity
                                                                            486 BP; 137 A; 79 C; 144 G; 126
  Conservative
                    61.1%;
76.0%;
  0;
                    Score 295; DB 22
Pred. No. 2.9e-79
  Mismatches
                                                                            T; 0 other;
  115;
                                      22;
                                  Length
  Indels
0;
Gaps
```

```
428
                             425
                                                              368
                                                                                              365
                                                                                                                            308
                                                                                                                                                           305
                                                                                                                                                                                          248
                                                                                                                                                                                                                        245
                                                                                                                                                                                                                                                      188
                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                     128
                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                         GCCAGCTGTTCGGTAAAGGCTCTGGTCGTTGTCTGGTCGATGGCCATTCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTGGGTTGCGCCC
                TCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA 483
                                                                             GTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGGAAACAGGAAA
                                                                                                                                          GTGGATTAATTGGTTCTAAAATCGGTCAATCGATCGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                        GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                   GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
TTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA
                                                                                                                            GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                               AGAACTTCAGCCGCCAGGAAGTTGGGCGCGCGCCACCGGTGCGGTTGTGGGCGGGTGTTGCCG
                                                              GCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                  AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                              427
                                                                                              424
                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                            367
                                                                                                                                                                                          307
                                                                                                                                                                                                                        304
                                                                                                                                                                                                                                                      247
                                                                                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                           364
```

```
AAH79040 standard;
                 cDNA;
                 489
```

ВP

δÃ 밁 Q В γQ 밁 δÃ 밁 Š

В

15-JAN-2002 (first entry;

Piscirickettsia salmonis polynucleotide P10.6.

septicaemia; ATCC VR-1361; Piscirickettsia salmonis; SRS; almonis; piscirickettsiosis; salmonid rickettsial; surface antigen; vaccine; antibacterial; fish;

```
Matches
                                                                                                                                                                                                                                                                                                                   Query Match
                  425
                                     368
                                                                          308
                                                                                           305
                                                                                                              248
                                                                                                                                245
                                                                                                                                                   188
                                                                                                                                                                    185
                                                                                                                                                                               125 GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGG 184
                                                                                                                                                                                                                                                                                                                                     The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity to known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3; Fig 4; 25pp; English.
                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                               New nucleic acids encoding an amino acid sequence homologous to surface antigen present on Piscirickettsia salmonis are useful to protect fish against piscirickettsiosis .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simard
Burzio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-MAR-2000;
01-JUL-2000;
01-JUL-2000;
29-JUL-2000;
                                                                                                                                                                                                                                             65
TCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA 483
                                                                                                                                                                                                                                                                                                          Local
                   GCCÁGCÁATÁTTGTGGAGAÁTTTCAGCAAAÁGGGGATGÁTTGCAGGGCCAGAÁGCÁAGÁGA
                            GTCAGCAGTACTGCCGCGGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA 424
                                                      8
                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (AQUA-) AQUA HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-MAR-2001;
                                                                                           ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                      ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-SEP-2001.
                                                                                                                                GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGGAGGATAAAATAAAGGTAA
                                                                                                                                           GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200168865-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Piscirickettsia salmonis.
                                                                                                                                                                    GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                          AGAACTTCAGCCGCCAGGAAGTTGGCGCGCCGCCACCGGTGCGGTTGTGGGCGGTGTTGCCG 124
                                                                                                                                                                                                        GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCC
                                                                                                                                                                                                                                                                                                 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-639050/73.
DB; AAG78025.
                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                         489 BP; 139 A; 79 C; 144 G; 127 T; 0 other;
                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; 2000GB-0005838.
; 2000GB-0016080.
; 2000GB-0016082.
; 2000GB-0018599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001WO-GB01055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                   61.18;
76.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Η,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EURO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۵
                                                                                                                                                                                                                                                                                       Pred. No. 2.9e
0; Mismatches
                                                                                                                                                                                                                                                                                                 Score 295;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Griffiths S,
                                                                                                                                                                                                                                                                                     DB 22;
2.9e-79;
hes 115;
                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Valenzuela
                                                                                                                                                                                                                                                                                                      489;
                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                               Gaps
                                                        367
                                                                          364
                                                                                                                                                                                                                                                                                                                                                                                                                          ξ
                                                                                            307
                                                                                                               304
                                                                                                                                247
                                                                                                                                                   244
                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                               0;
                                                                 δÃ
                                                  밁
                                                                                      Вb
                                                                                                      Ŷ
```

-10 В δã 뮍 Qy DЪ δÃ В Qy DЬ Qy В Qγ В ρy

110

```
AAF86252
ID AAF862
                                                                                                                                                                              Matches
                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
AAF86254/c
ID AAF862
        AAF86252
                                                                                                                                                                                  This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a Salmonis specific antigen termed Ospa, or an immunogenic fragment of a particularly poikilothermic fish, against the bacterial pathogen protecting animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The present a PCR primer used in the cloning and optimisation of the P. salmonis Ospa gene. The Ospa gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                           y Mac
t Local S
118;
                                                                                                                                                                          Sequence 118
                                                          58
                                                                                                                                                                                                                                                                                                                Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                       Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                             Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                               (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                   (KAYW/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Piscirickettsia salmonis.
                                     GCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAAC 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Poikilothermic vaccine; Ospa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86254 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF86254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     428
     standard;
                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17E2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer
                                                                                                                                                                                                                                                                                                                                                                                                           ) KAY W W.
) BURIAN J.
) KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Burian J,
                                                                                                                              ilarity 100.0%; r
                                                                                                                                                                    BP; 21 A; 32 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fusion construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #4 used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
   DNA;
                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fish; Piscirickettsia salmonis; rickettsial pathogen;
salmonid rickettsial septicaemia; rickettsial disease;
ion construct; PCR primer; ss.
                                                                                                                                                    24.48;
                                                                                                                                                                                                                                                                                                                                                                                       Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in cloning an optimisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                                                        )%; Score 118; DB 22; L
)%; Pred. No. 5.5e-26;
Vienatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                             28 G; 37 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              дB
                                                                                                                                          Length 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of.
                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                    0;
```

ļ.

```
RESULT 7
AAF86255/c
ID AAF86255 s
XX
AC AAF86255;
XT 11-JUL-200
XX
DE PCR primes
XX
KW Polkilothe
KW vaccine; (
                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; PCR primer; ss.
Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; Ospa; salmonid rickettsial septicaemia; rickettsial disease
                                                                      11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                  Sequence 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     septicaemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCR primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-JUL-2001
                                         PCR primer #5 used in cloning an optimisation of OspA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF86252;
                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                 | TGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGG
                                                                                                                                                                                                             GCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATG
                                                                                                                                                                                              GCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGGCGATG
                                                                                                                                                                                                                                                                                                           109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for protecting poikilothermic fish against salmonid rickettsial aemia and other rickettsial diseases comprises administering a containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                         Similarity 99.:
)9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burian J,
                                                                                                                            standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fig 4B; 35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #2 used in cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                BP; 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     salmonis
                                                                                                                                                                                                                                                                                                                                                                Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kuzyk MA;
                                                                                                                                                                                                                                                                                                                      22.4%;
99.1%;
                                                                                                                                                                                                                                                                                                                                                                28 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            English.
                                                                                                                            ΒP
                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                        Score 108.4; DB 22;
Pred. No. 4.2e-23;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                45 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      optimisation
                                                                                                                                                                                                                                                                                                                                                                24 T;
                                                                                                                                                                                                                                                                                                     .2e-23;
1;
                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OspA
                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                     110;
                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                               112
                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT 8
AAF86253
ID AAF8
XX AAF8
AC AAF8
XX POIN
XX PISC
XX P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \begin{array}{c} \mathsf{X} \times \mathsf{C} \times \mathsf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention relates to a method for the protection against infection of a politiothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals particularly polkilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The preser sequence represents a PCR primer used in the cloning and optimisation of the p. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a
                                                                                                                                                                                                                                                                                                                Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                            vaccine; O
SRS; 17E2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Poikilothermic vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCR primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86253 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vaccine containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRS; 17E2; fusion construct; PCR primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KAYW/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              334 ACCTACCAGCGTTACAACAAACAGGAACGCCGTCAGCAGTACTGCCGGGAATTTCAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACC 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KAY W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BURIAN J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 102 BP; 14 A; 23 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #3
                                                                                                                                                                                                                                                                                                                                                                                                                                        fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                  construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21.1%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 102;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                            primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             optimisation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.6e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of OspA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      animals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43
```

0

CA2281913-A1

Kay WW,

```
(KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                 Piscirickettsia
                                                                                                                                                                                                                                    Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                     PCR primer #1 used in cloning an optimisation
                                                                                                                                                                                                                                                                                                                                          11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                AAF86251 standard; DNA; 111 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method ospA, or an immunogenic fragment of particularly poikilothermic fish, against the bacterial pathogen particularly poikilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial diseases. The method is also useful for protecting against salmonid sequence represents a PCR primer used in the cloning and optimisation of invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139 AAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 94 BP; 18 A; 20 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 3; Fig 4B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTAAAATCGGTCAGAGCATGGACCAGCAGGATA 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTAAAATCGGTCAGAGCATGGACCAGCAGGATA 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGGCTCTGGTGTGGCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
93; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) KAY W W.
) BURIAN J.
) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Burian J,
                                                                                                              99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                         99CA-2281913
                                                                                                                                                                                                                              salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35 G; 21 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 92.4; DB 22;
Pred. No. 2.7e-18;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                              of OspA gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                 RESULT 10
AAF86256/c
ID AAF862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis .
                                                                                                                                  (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                              WPI; 2001-316844/34.
                                                                                                                                                                                                                         17-SEP-1999;
                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                      Poikilothermic fish; piscirickettsia salmonis; rickettsial vaccine; OspA; salmonid rickettsial septicaemia; rickettsia SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                   CA2281913-A1
                                                                                                                                                                                                                                                                                                              Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                PCR primer #6 used
                                                                                                                                                                                                                                                                                                                                                                                                                      11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86256 standard; DNA; 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF86256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method ospA, or an immunogenic fragment of particularly poikilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 111 BP; 16 A; 32 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 3; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCCAGAACTTCAG 74
                                                                                                      Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
74; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                         99CA-2281913
                                                                                                                                                                                                                    99CA-2281913
                                                                                                                                                                                                                                                                                                           salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4B; 35pp; English.
                                                                                                      Kuzyk
                                                                                                                                                                                                                                                                                                                                                                               in cloning an optimisation of OspA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.3%; 5
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 74; DB Pred. No. 1.1.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30 G; 33 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 1.1e-12;
ches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 22;
                                                                                                                                                                                                                                                                                                                                    ickettsial pathogen;
rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
```

0;

Gaps

0

Ъ δÃ DЪ Q

199 61

Query Match Best Local

Local

Matches

RESULT 9
AAP86251
AID AAP86251
AID AAP86251
AID AAP86251
AIC AAP862
AIC AAP86

17-SEP-1999; 17-SEP-1999;

17-MAR-2001.

1

```
RESULT 11

AAC45883;

XX

AAC45883;

XX

ACC AAC45883;

XX

DT 18-OCT-200

XX

Hybridisen

KW Protein 10

ACC AACA-19

PR 05-MAR-19

PR 05-MAR-19

PR 08-APR-19

PR 19-APR-19

PR 19-APR-19

PR 19-APR-19

PR 23-APR-19

PR 23-APR-19

PR 19-APR-19

PR 19-APR-19

PR 23-APR-19

PR 30-APR-19

PR 30-APR-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Ma
Best Loc
Matches
25-FEB-1999

05-MAR-1999

09-MAR-1999

23-MAR-1999

25-MAR-1999

01-APR-1999

01-APR-1999

06-APR-1999

16-APR-1999

16-APR-1999

19-APR-1999

23-APR-1999

23-APR-1999

23-APR-1999

23-APR-1999

23-APR-1999

23-APR-1999

24-APR-1999

25-APR-1999

26-APR-1999

30-APR-1999

30-AP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-SEP-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGCACCGAAAAA 483
||||||||||||||||
TTAGCACCGAAAAA 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGA 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 73; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
  990S-0123180

990S-0125788

990S-0125788

990S-0126785

990S-0126785

990S-0128734

990S-0128714

990S-013077

990S-0130449

990S-0130449

990S-0130891

990S-0132487

990S-0132487

990S-0132487

990S-0132485

990S-0132485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48;
                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0121825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 72.4; DB 24,
Pred. No. 3.3e-12;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>8</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48114.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
    11 MAY 1999
14 MAY 1999
14 MAY 1999
18 MAY 1999
18 MAY 1999
21 MAY 1999
22 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
20 MAY 1999
21 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
21 MAY 1999
21 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
21 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
20 MAY 1999
21 MAY 1999
22 MAY 1999
23 MAY 1999
24 MAY 1999
25 MAY 1999
26 MAY 1999
27 MAY 1999
28 MAY 1999
29 MAY 1999
29 MAY 1999
20 MAY 1999
20 MAY 1999
21 MAY
990S-0134256
990S-0134219
990S-0134219
990S-0134219
990S-0134376
990S-0134376
990S-0135523
990S-0135523
990S-0135622
990S-0136622
990S-0136622
990S-0136622
990S-0136622
990S-0137522
990S-0137522
990S-0137522
990S-0137524
990S-0139453
990S-0139453
990S-0139453
990S-0139453
990S-0139453
990S-0139453
990S-0139453
990S-014953
990S-014953
990S-014953
990S-014953
990S-0144332
990S-0144333
```

23-JUL-1999; 23-JUL-1999; 26-JUL-1999; 27-JUL-1999; 27-JUL-1999;

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
This sequence encodes a synthetic spider dragline variant monomer, DP-1B.9. The sequence of the DP-1B.9 polymer is given in AAR99055. The polypeptide monomer is a variant based on a consensus sequence esp. the natural protein [Spider of spider dragline protein DNA sequence may be used in the recombinant production of the subtills. Synthetic analogues of DP1 were designed to mimic the subtills. Synthetic analogues of DP1 were designed to mimic the repeating consensus sequence of the natural protein and the pattern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 67
                                                                                                             Claim 5; Page 122; 168pp; English.
                                                                                                                           New synthetic variants of spider dragline protein - for making fibres useful as clothing, surgical silk, plastic reinforcement etc., also related DNA, vectors and transformed cells
                                                                                                                                                                                    P-PSDB;
                                                                                                                                                                                                                 Fahnestock SR;
                                                                                                                                                                                                                                  (DUPO ) DU
                                                                                                                                                                                                                                                          15-JUN-1993;
                                                                                                                                                                                                                                                                             15-JUN-1994;
                                                                                                                                                                                                                                                                                                                                              Spider; dragline protein; variant; monomer; polymer; fibre forming region; Spidroin 1; Nephila clavipes; DP1; mimic; DP1A analogue; fibre; high tensile strength; elasticity; clothin rope; surgical suture; implant; reinforcement; film; coating; ss.
                                                                                                                                                                                                                                                                                                  22-DEC-1994.
                                                                                                                                                                                                                                                                                                                      W09429450-A2.
                                                                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAT18913 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                       17-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAT18913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-OCT-1999
22-OCT-1999
25-OCT-1999
25-OCT-1999
25-OCT-1999
26-OCT-1999
26-OCT-1999
26-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
29-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 TCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGG 197
                                                                                                                                                                                1995-036479/05.
DB; AAR99054.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 8.2%;
l Similarity 59.3%;
67; Conservative
                                                                                                                                                                                                                                     PONT
                                                                                                                                                                                                                                                                                                                                                                                                           spider dragline
                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                      93US-0077600
                                                                                                                                                                                                                                                                         94WO-US06689.
                                                                                                                                                                                                                                   DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0160981
99US-0161404
99US-0161405
99US-0161406
99US-0161359
99US-0161350
99US-0161360
99US-0161361
99US-0161920
99US-0161992
99US-0161993
99US-0161993
                                                                                                                                                                                                                                 NEMOURS &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           303
                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Score 39.4; DB;
; Pred. No. 0.11;
0; Mismatches ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                      variant, DP-1B.9 monomer.
                                                                                                                                                                                                                                Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                          clothing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

27-UIL-1999
27-UIL-1999
27-UIL-1999
27-UIL-1999
27-UIL-1999
27-UIL-1999
27-UIL-1999
28-UIL-1999
28-UIL-1999
20-AuG-1999
20-AuG-1999
20-AuG-1999
20-AuG-1999
20-AuG-1999
20-AuG-1999
20-AuG-1999
21-AuG-1999
21-AuG

99US-0145218
99US-0145218
99US-0145218
99US-0145918
99US-0145918
99US-0145918
99US-0145918
99US-014538
99US-014538
99US-0146386
99US-0146386
99US-0147038
99US-0147038
99US-0147039
99US-0147493
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147493
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147038
99US-0147039
99US-0147039
99US-0147039
99US-0147039
99US-0151080
99US-01

٩,

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CC of variation among individual repeats. DP-1B analogues were designed CC by reordering the four repeats within the monomer of DP1A. This CC monomer exhibits all of the regularities of (1)-(5) below. In addition, CC it exhibits a regularity of the natural sequence which is not shared by CC period of the period of the natural sequence which is not shared by CC generally preceded by a repeat in which both GYG and GRG are deleted is CC generally preceded by a repeat lacking the entire poly-alanine repeat, CC with one intervening repeat. The sequence of DP-1B matches the natural CC sequence more closely over a more extended segment than does DP-1A. The CC individual repeats differ from the consensus according to the pattern: CC (1) the poly-alanine sequence varies in length from 0-7 residues; (2) when the entire poly-alanine sequence is deleted, CC so also is the surrounding sequence encompassing AGRGGLGGGAGANGG; CC (3) aside from the poly-alanine sequence, deletions usually CC encompass integral multiples of three consecutive residues; (4) deletion of GYG is generally accompanied by deletion of GRG in the same sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                           Spider; dragline protein; variant; monomer; polymer; fibre forming region; Spidroin 1; Nephila clavipes; DP1; mimic; DP-1A analogue; fibre; high tensile strength; elasticity; clothir rope; surgical suture; implant; reinforcement; film; coating; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The proteins may be used to produce fibres of high tensile strength elasticity, suitable for clothing, rope, surgical sutures, biomater
New synthetic variants of spider dragline protein - for making fibres useful as clothing, surgical silk, plastic reinforcement etc., also related DNA, vectors and transformed cells
                                                                     WPI; 1995-036479/05
P-PSDB; AAR99052.
                                                                                                                                                                                                15-JUN-1993;
                                                                                                                                                                                                                                                                                                                                            Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAT18912 standard; DNA; 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 303 BP; 43 A; 69 C; 138 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in the same
                                                                                                                           Fahnestock
                                                                                                                                                                                                                                   15-JUN-1994;
                                                                                                                                                                                                                                                                       22-DEC-1994
                                                                                                                                                                                                                                                                                                          WO9429450-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   residues
                                                                                                                                                            (DUPO ) DU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         145 TCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147 GCTGGTGCAGCAGCTGCCGCTGCGGGGTGCAGGCCAAGGTGGATATGGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85 GTTGGCGGGCCACCGGTGCGGTGTTGTGGGCGGTGTTTGCCGGTAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          implants, plastic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCGGCAGCTGGTGGTGGTCAGGGCGGTCTTGGCTCACAAGGGGGCCGGTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e sequence; and
) a repeat in which the entire poly-alanine sequence
generally preceded by a repeat containing six alanin
                                                                                                                                                            PONT DE NEMOURS & CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                93US-0077600
                                                                                                                                                                                                                                   94WO-US06689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dragline variant, DP-1A.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.6%;
57.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reinforcements,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 36.6; DB Pred. No. 0.34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                            m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rope, surgical sutures, biomaterials its, films, coatings, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       monomer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  six alanine
                                                                                                                                                                                                                                                                                                                                                                                              clothing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

В Qy

망 20

198 145 138

TCTGGTCGTGTGGCGATGGCCATCGGCGGTGCGGTGTGTGGCTCTGATTGGCT 199

GCTGGTGCAGCAGCAGCTGCCGCTGGCGGTGCAGGCCAAGGTGGATATGGTGGCT

```
cc derived from the fibre forming regions of spider dragline protein,

Cc esp. the natural protein 1 (Spidroin 1) from Nephila clavipes. This

CDNA sequence may be used in the recombinant production of the

CC variant protein in a recombinant host, e.g. E. coli or Bacillus

CC variant protein in a recombinant host, e.g. E. coli or Bacillus

CC variant protein in a recombinant host, e.g. E. coli or Bacillus

CC variant protein in a recombinant host, e.g. E. coli or Bacillus

CC variant protein in a recombinant protein and the pattern

CC of variation among individual repeats. DP-1A analogues are composed

CC of a tandemly repeated 101 amino acid monomer which comprises four

CC repeats which differ from the consensus sequence given in AAM06201,

CC according to the pattern (1)-(5) given below. This 101 amino acid

CC monomer is repeated 1-16 times in a series of analogue proteins. The

CC individual repeats differ from the consensus according to the pattern:

CC (1) the poly-alanine sequence varies in length from 0-7

CC residues; (2) when the entire poly-alanine sequence is deleted,
                                                                                                                                            Query Match
Best Local :
                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                            in the same sequence; and (5) a repeat in which the entire pedeleted is generally preceded by a repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encompass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    so also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The polypeptide monomer is a variant based on a consensus sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 2;
                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                       The proteins may be used to produce fibres of high tensile strength and elasticity, suitable for clothing, rope, surgical sutures, biomaterials
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence
                                                                                                                                                                                                                                                                                                                                                                                         residues
                                                        85
                                                                                                                                                                                                                                                                                               implants, plastic
GCTGCGGCAGCTGGTGCTGCTCAGGGCGGTCTTGGCTCACAAGGGGCCGGTCAAGGC 197
                                  GTTGGCGGGCCACCGGTGCGGTTGTTGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGC
                                                                                                             l Similarity
66; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is the surrounding sequence encompassing AGRGGLGGOGAGANGG; (3) aside from the poly-alanine sequence, deletions usually sintegral multiples of three consecutive residues; (4) deletion of GVG is generally accompanied by deletion of
                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 121; 168pp; English.
                                                                                                                Conservative
                                                                                                                                                                                                                                   B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  encodes a synthetic spider dragline variant monomer, sequence of the DP-1A.9 polymer is given in AAR99053.
                                                                                                                                                                                                                                      43
                                                                                                                                                                                                                                      A;
                                                                                                                                            7.6%;
57.4%;
                                                                                                                                                                                                                                                                                               reinforcements,
                                                                                                                                                                                                                                      69 C;
                                                                                                             Score 36.6; DB Pred. No. 0.34; 0; Mismatches
                                                                                                                0;
                                                                                                                                                                                                                                   138 G;
                                                                                                                                                                                                                                                                                                                                                                                                               entire poly-alanine a repeat containing s
                                                                                                                                                                                                                                                                                           rope, sur
                                                                                                                                                                                                                                      53 T;
                                                                                                                                                                                                                                      0 other;
                                                                                                                                                                           DB 16;
                                                                                                                49;
                                                                                                                Indels
                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                     six alanine
                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
                                                                                                                                                                           303;
                                                                                                                0
                                                                                                                Gaps
                                                     144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRG
                                                                                                                0
```

```
AAT31799,
                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
                                                                                                                                                       Erythrobacter
                                                                                                                                                                                                                   open reading frame;
                                                                                                                                                                                                                                                                                                                                                                                                 AAT31799 standard; DNA; 1305
30-SEP-1994;
                                                                            09-APR-1996
                                                                                                                  JР08089241-A
                                                                                                                                                                                                                                      Phytoene dehydrogenase; Erythrobacter
                                                                                                                                                                                                                                                                             Erythrobacter
                                                                                                                                                                                                                                                                                                                     20-SEP-1996
                                     30-SEP-1994;
                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                             longus lycopene cyclase gene
                                                                                                                                                       Longus
                                                                                                                                                                                        rogenase; Erythrobacter longus; Erwinia hebicola;
rame; lycopene cyclase; Rhodobacter sphaeroides;
food colourant; additive; anti-cancer; ds.
94JP-0236621
                                     94JP-0236621
                                                                                                                                                                                                                                                                                                                                                                                                 ВP
```

(ASAH) ASAHI

KASEI KOGYO KK

```
RESULT 15
ABL03846
ID ABL03
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                    New isolated nucleic a
genes from Drosophila
interactions -
                                                                              P-PSDB;
                                                                                                              Venter
                                                                                                                                                     23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150
                                                                                                                                 (PEKE ) PE CORP NY.
                                                                                                                                                                                     23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                     Drosophila melanogaster
                                                                                                                                                                                                                                                                                                   Drosophila melanogaster expressed polynucleotide SEQ ID NO 6020.
                                                                                                                                                                                                             27-SEP-2001
                                                                                                                                                                                                                                 WO200171042-A2
                                                                                                                                                                                                                                                                           pharmaceutical;
                                                                                                                                                                                                                                                                                                                             26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                        ABL03846;
                                                                                                                                                                                                                                                                                                                                                                          ABL03846 standard; cDNA; 3251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This is the nucleotide sequence encoding the lycopene cyclase enzyme from Erythrobacter longus ATCC 14126. The gene was isolated from an dehydrogenase genemic DNA library using a 1 kb fragment of the phytoene a nucleotide fragment which contained two open reading frames (ORF). (1302 bp) encodes the phytoene dehydrogenase (AAT31798) whereas ORF1 plasmid produces lycopene cyclase. The two ORFs were inserted into the Rhodobacter sphaeroides for produce of the proteins. The phytoene dehydrogenase and lycopene cyclase can be used to produce beta-carotine effects.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1305 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Erythrobacter sp. phytoene dehydrogenase and lycopene cyclase genes for the prodn. of beta-carotine useful as a food colourant
                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 6-7; 7pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1996-233337/24
P-PSDB; AAR95698.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                          2001-656860/75.
DB; ABB59743.
                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGTTCTGGGCGGTCTGAATTGGCTCAAAATCGGTCAGAGCATGGACCAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTTGTTCGATGGCCATCGGCGGT 174
                                                                                                            JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                           Adams M,
                                                                                                                                                                                                                                                                     developmental biology; cell signalling; insecticide;
cal; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251 A; 392 C; 403 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.5%;
56.9%;
                                          acid
a and
                                                                                                            匚
                                                                                                           PWD,
                                     detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 36; DB Pred. No. 0.95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                          Myers
                                                                                                          EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           259 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 17; Length 1305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                      1000
and c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                      cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

Search completed: October Job time: 129.627 secs

27, 2002, 16:40:46

/57 4

Claim 1;

ID NO 6020; 21pp + Sequence Listing; English

```
Qy
                                                                   В
     밁
                                                                                                Qy
                                                                                                                                 뫄
                                                                                                                                                               Qy
                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                 1399
     1519
                                                                   1459
                                                                                                                                                                                                1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB0737-ABB72072).
                                                                                                                                                                                                                                                                1279
                                                                                                                                                                                                                                                                                                                                                                                                             The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3251 BP; 859 A; 752 C; 758 G; 882 T; 0 other;
                                                                                                    232
                                                                                                                                                                                                                               112
                                                                                                                                                                172
                                                                                                                                                                                                                                                                                                             Ma
Local \
117;
                                                                                                                                                                                                                                                                        52 GTGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTG
CTGCGGGCGACC
                                                       GTGGACCTCTTGAGCCTGCAATTGGGAAGGGGAAAATATCAGTTCTGGAAGAGATTAGCCT 1518
                                  AATCCGGACACC
                                                                                                                     GCGCAGGCTGGCGGACACCTCCTTGGAGATGTTGTCGCTCAGCCACTGGCGCAGGAAGGC 1458
                                                                                                                                                                                                                 GGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGC 171
                                                                                   AAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGT
                                                                                                                                            GGTGCGGTTCTGGGCCGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGAT 231
                                                                                                                                                                                   GTCGGGCTTCTTGGCCAGCTCCTTGGCGTTGGCGGCGGTCACGGATCCACCGTACTGGAT 1398
                                                                                                                                                                                                                                                  GTTGATGATGTCCACGAACTCGGGCTTCAGGGAGGCGCCTCCGACCAGGAAGCCATCTAT 1338
                                                                                                                                                                                                                                                                                                                          Conservative
 1530
                                                                                                                                                                                                                                                                                                                                        7.5%;
                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                        Score 36;
                                                                                                                                                                                                                                                                                                                                        Pred. No. 1.4;
                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                      23;
                                                                                                                                                                                                                                                                                                                       135;
                                                                                                                                                                                                                                                                                                                                                   Length 3251;
                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                   111
                                                                                                                                                                                                                                                                                                                                                                                                                                    WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is
```

0;

Run

9

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
No.
                                                      score greater than and is derived by a
                                                                                                                                                                                                                                                                                                                                                                                                                                            8G
          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                                         o
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-677-374-3
483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  October 27, 2002, 15:07:23 ; Search time 935.413 Seconds (without alignments) 10805.408 Million cell updates/sec
       Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC Gapop 10.0 ,
                                                      is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, rived by analysis of the total score distribution.
                                                                                          1797656 seqs, 10463268293
                                                                                                                                                                                                                                                                                                                                                                                       GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                         Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version Copyright (c) 1993 - 2002
                                                                                                                                                                                                                                                                                                                                                           gb_ba:*
gb_htg:*
gb_in:*
                                                                                                                                                                                                                                                                                              gb_pr:*
                                                                                                                                                                                                                                                                                                                gb_om: *
gb_pat: *
gb_ph: *
gb_pl: *
                                                                                        em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                           gb_sts:*
gb_sy:*
gb_un:*
gb_vi:*
                                                                                                                                                     em_hum: *
em_in: *
em_mu: *
em_or: *
em_ov: *
em_pat: *
em_ph: *
em_pl: *
                                                                                                                            em_un:*
em_v1:*
                                                                                                                                                                                                                                                    em_ba:*
                                                                                                                                             em_sts:*
                                                                                                                                                                                                                                             em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 1.0
            DB
            ij
                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.1.3
Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ltd.
            Description
                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                               DEFINITION ACCESSION
   BASE COUNT
ORIGIN
                                                                                                                                                                                         RESULT 1
AX252413
                                                                                                   REFERENCE
                                                                                                                                              KEYWORDS
                                                                                                                                                       VERSION
                                               FEATURES
                                                                                                                                                                                 Locus
                                                                                                                                                                                                                                                                               0000
                                                                                                                                                                                                                                                                                                                        C
                                                                                                                                                                                                                                                                                                                                                    C
                                                                                                                                                                                                                                                                                                                                                                                       0000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                    იი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0000
                                                                                                                                                                                                                                                      00
                                                              TITLE
JOURNAL
                                                                                          AUTHORS
                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              295
295
46.6
                                                                                                                                                                                                                                                                                                                                            40.8
40.2
40.2
40.2
39.6
39.4
39.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42.8
42.8
41.6
                                                                                                                                                                                                                                                      38
38
                                                                                                                                                              Sequence 5 from Patent W00168865. AX252413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 6 3 3 9
                                                                                                                            Piscirickettsia salmonis.
Piscirickettsia salmonis
                                             Fish vaccine against piscirickettsia salmonis
Patent: WO 0168865-A 5 20-SEP-2001;
Aqua Health (Europe) Limited (GB)
Location/Qualifiers
                                                                                      Simard, N., Brouwers, H., Jones, S.F.,
                                                                                                                                                       AX252413.1 GI:15985721
                                                                                  Burzio,L.
                                                                                                           Piscirickettsia.
                                                                                                                   Bacteria; Proteobacteria;
                                                                                                  (bases 1
            139
                                                                                                                                                                                                                                                     1.1 489
1.1 498
3.3 237523
8.6 237523
8.6 203050
8.4 213050
8.3 10127
8.2 106702
8.1 1070
8.1 1070
8.1 1070
8.1 1070
8.1 1070
8.1 1070
8.1 125020
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 11070
7.7 110806
7.7 12864
7.7 13348
7.6 55344
7.6 138881
7.6 138881
            a
            /organism="Piscirickettsia salmonis"
/db_xref="taxon:1238"
79 c 144 g 127 t
                                      .489
                                                                                                  to 489)
                                                                                                                                                                                                                                                      222221411
                                                                                                                                                                                                                                                                                                                                                                                                                                            311911333388
                                                                                                                                                                                                                                                     DMU60850
DMU60850
RIRANTTR
RIRANTTR
RIRANTTR
AF429315
SVV117269
AE003872
DSU60866
DSU60868
DSU60868
DSU60868
DSU60868
DSU60868
DSU60869
AE009066
DMU60848
AE009066
ARITETRAPRO
DSU60867
RITETRAPRO
DSU60867
AF004589
AF004589
AF004589
AF004589
AF004589
AF004589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RPXX04
AL646071
AL646061
AL646061
AL646079
RIFANT17KA
RIFANT17KA
AE004675
AE004537
ATF7K2
ATCHRIV57
DMU60844
DMU60847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AX252413
AF184152
RIR17KGCA
                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                   gamma
                                                                                                                   subdivision; Piscirickettsia
                                                                                                                                                                                 DNA
                                                                                         Griffiths, S.,
                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                       ALG446079 Ralstonia
M284490 R.conorii 1
M28479 R.rickettsi
AE008457 Frickettsi
AE008457 Pseudomon
AL033545 Arabidops
U60844 Drosophila
U60845 Drosophila
U60847 Drosophila
U60846 R.typhi 17K
M16486 R.rickettsi
AF429315 Homo sapi
Y17269 Streptomyce
AE003872 Xylella f
U60862 Drosophila
U60862 Drosophila
U60865 Drosophila
U60866 Drosophila
U60866 Drosophila
U60866 Drosophila
U60866 Drosophila
U60866 Drosophila
U60868 Rosophila
U60868 Rosophila
U60848 Drosophila
U60848 Drosophila
U60848 Drosophila
U60848 Rosophila
AB046994 Streptomy
AE008037 Agrobacte
AE009066 Agrobacte
AE009066 Agrobacte
AE009066 Agrobacte
AE00906945 Caulobact
M74042 R.australis
U60861 Drosophila
                                                                                                                                                                                                                                                    AL590435 Streptomy
AC100687 Mus muscu
AP004589 Oryza sat
AC025524 Homo sapi
AC092934 Homo sapi
AC025802 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D16515 Rickettsia
AJ235273 Rickettsi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX252413 Sequence
AF184152 Piscirick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL646061 Ralstonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U76907 Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AL646071 Ralstonia
                                                                                          Valenzuela,P.
                                                                                                                                                                                  PAT
                                                                                                                                                                                 05-OCT-2001
```

Database

Result

group;

Minimum

Maximum

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 2
AF184152
                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Sim
Matches 364;
                                                                                                                                                                                                                                                     JOURNAL
                                                                                                    gene
                                                                   CDS
                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTACGCCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGGAGCAGGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATTGGCCATTTGGTGTTTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCAGCTGTTCGGTAAAGGCTCTGGTCGTCTGTCGATGGCCATCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGGCGGTGTTGCCG 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTTGGGTTGGGCCC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                                                                                                                                                            Submitted (10-SEP-1999) Biochemistry & Microbiology, Victoria, Petch Building, PO Box 3055, Victoria, BC \( \) Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                      Kuzyk,M.A., Burian,J., Thornton,J.C. and Kay,W.W. Identification of a genus-common Rickettsial surf salmonid pathogen Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Piscirickettsia salmonis alanine racemase (alr) gene, partial cds; and BAX (bax), DNA repair enzyme RadA (radA), 17 kDa antigen (ospA), and transposase (tnpA) genes, complete cds.
                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                  2 (bases 1 to 4983)
Kuzyk, M.A. and Kay, W.W.
                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                       Piscirickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 4983)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                 /gene="alr"
<1. .501
                                                                                                                                   /organism="Piscirickettsia
/strain="LF-89"
/db_xref="taxon:1238"
                                          /gene="alr"
           /transl_table=11
                           /codon_start=1
                                                                                                                     /clone="pB12"
                                                                                                                                                                                               .4983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:10441343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61.1%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 295; DB 6;
Pred. No. 1.9e-61;
0; Mismatches 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                     gamma subdivision; Piscirickettsia
                                                                                                                                                                         salmonis'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 489;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                           surface
                                                                                                                                                                                                                            University of V8W 3P6, Canada
                                                                                                                                                                                                                                                                                                                                                           antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                           ĺ'n
                                                                                                                                                                                                                                                                                                                                                                                                                                 group;
                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                             /product="17 kDa antigen"
/product=17 kDa antigen"
/protein_id="AAG17000.1"
/db_xref="G1:10441346"
/translation="MNRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQ
LFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDT
GNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIST
EK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="DNA repair enzyme Rada"
/product="DNA repair enzyme Rada"
/product="DNA repair enzyme Rada"
/product="G1:10441344"
/db_xref="G1:10441344"
/translation="MSKGKNQYVCSDCGGIAKKWIGQCPHCQQWNSLSEVKEVLPNRPGRSQRFAGFAGIDAPKVKCLSEITPEQISRQPYGICEFDRVLGGGLVHGAVILLGGDPGIGKSTLLLQTSVNCTQFGKKLLYVTGEESLEQVTLRSKRIGLSQDVDLRLLAETQVERILKAAEIEQFKVLIVDSIQTIFTESLQASPGGYAQVRSAALTQFAKRTGTCLFLVGFKKTGLAEANELGIFAMTETGLKKTVSNPSAIFLSRYEDHQPGSVVMVAWEGTRPLLVEVQALVDESHSSNPRRIAVGLDQGRLAMLLAVLNRHGGIASYDQDVFINVVGGMKITETAADLALLLACVSSLRGKALSQE
/transl_table=11
/product="transposase"
/protein_id="AAG16999.:
/db_xref="GI:10441345"
                                                                                                                             complement(3842./gene="tnpA"
                                                                                                                                                                  /insertion_seq="insertion 3560. 3846
                                                                                                              complement(3842.
                                                                                                                                                                                                   /strain="LF-89"
/db_xref="taxon:1238"
/clone="pB12"
                                                                                                                                                                                                                                                                                3560. .4849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAG17002.1"
/protein_id="AAG17002.1"
/db_xref="G1:10441348"
/translation="MLSLAVITTAYLAQOPLFSAPTSKTQINTAYSQDIQSIKQEFII
KITQSENTINQIILQKRQHILSLIQKKSLSKQEITQLQALAKQYKLNNLHFKHPQDFS
KLLKKYUJIIPAALISAQAINSSNWGRSAFAVEGNNFFGMRCHYPGGGIIPKARPANNH
LLLKKYUJIIPAALISAQAINSSNWGRSAFAVEGNNFFGMRCHYPGGGIIPKARPANNH
                                                                                          /gene="tnpA"
                                                                                                                                                                                                                                                           /organism="Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2834. .3322
/gene="ospa"
                                                                         codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LIVFGEIGLSGEIRPVQRGLERIKEAVKHGFTQAIVPLANCPKQKVDGIEIVGVKHLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTKYVELIQTIITRYLSKESTSQIP" 1373. .2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="NSAAIFNESYERYDWYRPGIMLYGISPFADKNGVDLELQPYMHYVSRLISVKOLRQGESVGYGATWQCPEDMQVGILSLGYGDGYPRLAASGTPFLVRGQRCALIGRYSMDMIAIDLRRCPDAGYGEAVTVWGQDLPVEEIARHVGTIAYELVCNMPLRA
                                                                                                                                                                                                                                                                                                                                                                                                                             transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="ospA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=experimental
1373. .2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WEVANYSSMTASVRAYIHTLNTHNAYQALRDLRAHMRANHQDVSAFKLAEGLTAYSIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="bax"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PYIWQE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="radA"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="radA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=not_experimental
/product="BAX"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="bax"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(526. .1257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="alanine racemase"
/protein_id="AAG17001.1"
/db_xref="GI:10441347"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="alanine_racemase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                to the rickettsial 17 kDa antigen"
                                                                                                                                                .4561)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1257)
                                                                                                            .4561)
                                                                                                                                                                                   sequence-like element"
```

```
repeat_region
BASE COUNT 1362
ORIGIN
                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                          RIR17KGCA
                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                          MEDLINE
                                                                                           JOURNAL
                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGATGTTTGCAAGGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAGTCTCTGGAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTGGGTTGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCAGCAATATTGTCGAGAATTTCAGCAAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCGACCGGTGCGGTTGTTGGGCGGTGTTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   364;
                                                                          specimens
J. Clin.
95229950
                                                                                                                                                         Submitted (05-JUL-1993) Yoshiya Yoshida, Kanagawa Prefectural Pabulic Health Laboratoty; 52-2 Nakao-cho, Asahi-ku, Yokohama, Kanagawa 241, Japan (Tel:045-363-1030, Fax:045-363-1037) (bases 1 to 537)
                                                                                                                                                                                                                                                                                                                            17K genus-common antigen; 17k dalton protein. Rickettsia japonica (sub_species:YH) DNA. Rickettsia japonica
                                                                                                        Furuya,Y., Katayama,T., Yoshida,Y. and Kaiho,I.
Specific amplification of Rickettsia japonica DNA
specimens by PCR
                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia; spotted fever group.
                                                                                                                                                                                                                                                                                                                                                                                      D16515.1 GI:695412
                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                           RIR17KGCA
                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                           Yoshida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                          (bases 1 to 537)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ß
                                                                                           Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELMAFKMSKATTDDRVVLPKMÁENLTGKIIGDKGYISQKLFDQLYEKGLQLITKIRKN
MKNKLVLMIDKILLKKRGIIA"
4562. .4849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EIMTIMIYFHKSNYRNFKMYYLHVIKGSMVKYFPNSVSYNRFVELMPSILLPLCFFIA
AQGKTATGIYFVDSTILRVCHEKRASQNRAFKGLAKKSKSTMGWYYGFKLHIIVNDMG
/organism="Rickettsia
/sub_species="YH"
                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    translation="MDLTLISLFCVIDDFCQELLPQWNAILLEDTNKKRNKPSQMSTS/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.18;
76.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C
                                                                                           ω
w
                                                                                                                                                                                                                                                                                                                                                                                                                    17K genus-common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1265 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 295; DB 1
Pred. No. 2e-61;
                                                                                         (2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           537 bp
                                                                                         487-489 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1578
                    japonica'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 4983;
                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                      gene,
                                                                                                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                      complete
                                                                                                                                                                                                                                                                                                                                                                                                                                           BCT 04-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                        cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

Š В δõ 멍 Š 멍 Q В δõ 밁 50 В õ 밁 Ş

밁

rocus

```
JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RPXX04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 GGTGCGGTTGTGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGCAGGTGATTA 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAATAGGCGGAAAAACAACAAAAAGCATACGGTAATGCGTGCCGCCAACCTGACGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCGGTGCTGGTGGCGCATTACTTGGTTCTCAATTCGGTAAGGGCACAGGACAGCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCAAGTTGTGA 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGAGCAGGATAGAAGACTTGCAGAGAGCTTACCTCACAGAGAGCTTTA----GAAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGCCGTGAGTACACTCAAACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAACGGCAATTACGGTTACGTAACA
                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision; Ricke Rickettsiaceae; Rickettsiaee; Rickettsia; typhus q 1 (bases 1 to 237523) 1 (bases 1 to 237523) 2 Andersson, S.G., Zomorodipour, A., Andersson, J.O., Sicheritz-Ponten, T., Alsmark, U.C., Podowski, R.M., Eriksson, A.S., Winkler, H.H. and Kurland, C.G. The genome sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and to mitche body in the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazekii and the mitches and the sequence of Rickettsia prowazeki
Andersson, S.G.E. Direct Submission Size (11-NOY-1998) S.G.E. Andersson, Siv. Andersson@molbio.uu.se, Dept. of Molecular Biology, University of Uppsala, Husargatan 3, Uppsala, S-751 24, SWEDEN
                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia prowazekii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ235273.1 GI:3861237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia prowazekii
                                                                                                                                                                    99039499
                                                                                                                                                                                                Nature
                                                                                                                                                                                                                       mitochondria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia prowazekii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AJ235273 AJ235269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RPXX04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                          (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                             396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="BAA03965.1"
/db_xref="GI:1435056"
/translation="MKLLSKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
/translation="MKLLSKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
SQFGKGTGQLVGYGYGALLGAVLGGQLGAGMDEQDRRLAELTSQRALETAPSGSNVEW
RNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN"
1 92 c 129 g 140 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58. .537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="propagated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:35790"
                                                                                                                                                                                          (6707), 133-140
                                                                                                                                          ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 46.6
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            237523 bp
strain Madrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'n
                                                                                                                                                                                          (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
d E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cells"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genome;
                                                                                                                                                                                                                                                                                                                                                                                     group.
                                                                                                                                                                                                                                                   the origin
                                                                                                                                                                                                                                                                                                      Naslund, A.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159
                                                                                                                                                                                                                                                      of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲.
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="uuknown"
/product="uuknown"
/product="uuknown"
/product="uuknown"
/product="uuknown"
/product="uuknown"
/db_xref="G1:3861239"
/db_xref="G1:3861239"
/translation="mfTILVIVIIIMISLSALFAATETAITASSPGKIHKLKIAGNKR
/translation="mfTILVIVIIIMISLIAITILFISLLGNNGTIVASGVMAFIII
vFAEVVPKAIAVAKPEOLILKMSSTIVIFLKLFKPINIALDVITK FECFIFFR NLNPO
ISGTEEVRGVIEHYHOEGGVYKSERNMLGGILDIRNMTVSEIMTHRSNIIALNIDLPW
ELIIKTILSGATTRIFUMODNRDNIIGILNIKDLLKALYENNNDDKKVDINTLLTPPW
FIPDNALVVDQLHAFRERNNHFACVVDEYGTLLGIITLEDVIEEIVGPITDEHDRLNN
EIIQESNTEFIIKGTTTIRDIINRELDWNLSDEDANTIAGLIIHKIARIPNQGEVIKIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIGLFTTNSSIKKHIIMLMLSLIITYFILLNIKFSVISILTIMTSIFLMLHNVHYLLV
KTNYFRNSLKASSTSMILGHFGVALIAFSITMNSLLQSEMDFIGEVGTSKTFNAFKVT
LQNIKFAQGKNYYRQIAEFWLEDHKNNITILKPENRFYIIEQKLSQESDIHSYLLYDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PWIPCTSQVMTQAITEYASSLCSIFAFCTLVYAFITSDFSVQNVFLHSSTLKPLIYKI
SGSWSSHEGSWLLWFCLLQI'VSCCYIFCLEOKMLKFGSI'IILSAI'QLLESSFIYFTSN
PFHMESFVPREGLGILWPMLQDIALSIHPPLLYLGYVSYAVPFTIVCAIFLIAVI'SRLD
NULPGYFTGYKITQLSDRITSIRLLKIFAGCGILFTTIGISLGSWMAYRELNWGGLWF
FDVERNISLFPWLSGIMLHHSIIVTTKINRWOHWTIILSIITFLLVIESTFLVESGFI
NSHHAFAFSESERWIYLLVILCIIGIGGLYVIITRLNNCSIEKTIYNTFWMWTHSNCNWT
IKEKAILLIGNIFFLFSLIILLCATLYPTIYALFNDKPIIINEEFFIKNFIIFVIPILC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="RP703"
3341. .5353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3341.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="RP702"
2074. .3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="unknown"
/product="unknown"
/product="CAAL5137.1"
/protein_id="CAAL5137.1"
/protein_id="CAAL5137.1"
/db_xref="G1:3861238"
/translation="MARPIIFTLLFGNKDRILDRINNQKALNKLHIIPLQVNKESHIS
/translation="MARPIIFTLLFGNKNWKPIFRAQDLINACHNIKTTITDENKYN
ALFONSELKSYKKQILEKVDHYFFTNEADQNLSIAGDLINFKDKTTTITDIRLTYTSYFN
ALFONSELKSYWKQIIEKVDHYFFTNEADQNLSIAGDLINFKDKTTTITDIRLTYTSYFN
ALFONSELKSYMKQIIEKVDHYLIKTAKNQDSKEIIETWPISVDEATMLITAKFGITS
BOOLYGLKLEIHEILKDPNNAAENFKKYVSQISRQFKKDLDKDQKNHIDSNFNTQKVI
FIQVSDNTFAGIKTINIDDCQGLMFNSTPDAANTLNLQVGGNTINFNGIDGTGKLVL\
                                                       AAATTFDG IGFDQAAGAN I PVA PNSVI TANANN PITFNT PNGHLNSL FLDTANDLAVT
I NEDTTLGFI TNI AQQAKFEN FTVAAGKILN I TGQGI TVQEASNT I NAQNALTKVHGG
                                                                                                                                                                                                                                                                                                                                           complement(7264. .12195)
                                                                                                                                                                                                                                                                                                                                                                                                  complement(7264. .12195)
                                                                                                                                                                                                                                                                                                                                                                                                                                      YAVLSNIDGKIIHAKIYYKPMMSFIWIGVILTTAGFVIALIRKNSY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NFKIIILKKIANKIDSVKITVLPMTEETISSE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="RP701"
164. .1123
                                                                                                                                                  /product="CELL SURFACE ANTIGEN (sca5)"
/protein_id="CAA15140.1"
/db_xref="GI:3861241"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="CAA15139.1"
/db_xref="GI:3861240"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NDSNKDIQVEHITSYVQDKEKQSKPQGFLTRIFNYFKNIVFKQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                           /gene="RP704"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ccmF)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="CYTOCHROME C-TYPE BIOGENESIS PROTEIN CCMF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="RP703"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="RP702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /strain="Madrid E"
/db_xref="taxon:782"
                                                                                                                        translation="MAQKPNFLKKIISAGLVTASTATIVAGFSGVAMGAAMQYNRTTN
                                                                                                                                                                                                                                                   transl_table=11/
                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                 'gene="RP704"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              translation="MSKIGNFLLLTTMCLSGILTLLIIPWLDYLIKKKHRNNICLKFF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="RP701"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ∕organism="Rickettsia prowazekii"
                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
```

```
SKNGAATEFNVTGTLGGNLKGIIELNTAAVAGKLISQGGAANAVIGTDNGAGRAAGFI
VSYDNGNAATIEGQVYAKNMVIOSANAGGQVTFEHYVDVGLGGTTNETTABSKVIITE
NSNEGSTNEGNLDTQIVVPDTKILKGNFIGDVKNNGNTAGVITFNANGALVSASTDPN
IAVTNINAIEAEGAGVVELSGIHTAELRLCNGGSIFKLADGTVINGPVNGNALMNNNA
LAAGSIOLDGSAIITGDLGNGGVWAALQHITLANDASKILALDGANIIGANVGGAIHF
QANGGTIKLTNTQNNIVVNFDLDITTDKTGVVDASSLTNNQTLTINGSIGTVVANTKT
LAQLNIGSSKTILNAGDVAINELVIENNGSVQLHNTYLITKTINAANQGGIIVAADP
LNTNTTLADGTNLGSAERBLSTHEFAFKAANADSLLNVGKGVNLYAANITTNDANVGS
LHFRSGTSIVSGTVGGQOGHKLNNLILLDNGTTVKFLGDTTFNGGTKIEGKSILQISN
NYTTDHYESADNTGTLEFVNTDPTTVTLNKQGAYFGVLKQVIISGPONIVFNEIGNVG
IVHGLIANNSISEENASLGTSLFLSGTPLDVTLIKGGAYFGVLKQVIISGPONIVFNEIGNVG
IVHGLIANNSISEENASLGTSLFLSGTPLDVTIKTTYLGAATTGGAATDEDAKITLG
SVNGNANVRFVDSTFSDPRSMIVATOANKGTVTLKGGTTTIKGGATFUVASUFTG
IVGLGLENGSPRLKQVTFTTDYNNLGSIIANVTINGSLTPVASVFTTG
SVNGNANVRFVDSTFSDPRSMIVATOANKGTVTLGGTTTIKONANANFSGTOATLIN
GGARGLGGNIYSGNIDFGTYNLTILNSNVILGGGTTAINGSLDTVAGNSAIAN
APGVSQNISRCLESTNTAAYNNLLAKDPSDVATFTGAIATOTSAAVTTVLLNLLFANGTSTW
GDLLSRIGGTLKALTSDVAASATGAYSGDDEAEVSYGVMAKFFYNIABODKKGG
IAGYKAKTTGVVVGLDTLASDNLMIGAAIGITKTDIKHQDVKKGDKTDLINGLSFSLYG
VNINDNIVFFRAGLSYLKSSNENYKETGTTVANKRINSKFSGTAAVKRDKTGTTSAAVTYNLLTGY
DYNAMPNVLVPDMAGLSYLKSSNENYKETGTTVANKRINSKFSGTAAVSGTAKKGVIAAGNYDNNTFGGRULIFGY
VNITDLVIYPELHSFVVHKVNGKLSNGOSNLDGGTAPFISQPDRTAKTSYNIGLSANI
KSDAKKEYGIGYDFNSASSYTAHGGTLKYRNF"
COMPLEMENT(12953...13216)

-pyrophosphohydrolase."
complement(12953...13216)

-pyrophosphohydrolase."
complement(13563...14507)

gene="RP706"
RP706"
RP706"
RP706"
```

note="Pseudogene that lacks ATG or GTG initiation codor
Homology to guanosine-3,5-bis(diphosphate)
3-pyrophosphohydrolase."
3-pyrophosphohydrolase."
complement(12953. .13216)
/gene="RP705"
complement(13563. .14507)
/gene="RP706"
/codon_start=1
/transl_table=11
/product="unknown"
/protein_id="CAAL5141.1"
/db_xref="GI:3861242"
/translation="MKIRQTAKPVIIGISGPELTDAERELFEEHNPLGIILFRRN:
/translation="MKIRQTAKPVIIGISGPELTDAERELFEEHNPLGIILFRRN:
/translation="MKIRQTAKPVIIGISGPELTDAERELFEEHNPLGIILFRRN:

/Translation="MKIRQTAKPVIIGISGPELTDAERELFEEHNPLGIILFRRNIRK NEKGEQDKAALIKLIADIKEVLGDNTIIAIDQEGGMVKBLIAPTEVDAPAAQTTTELQ TCKINYSTIAKELKEVGINLDFAPVADLHDGADKIISDRSFEDEIVVPLFLSAIA GLQEEKVTACIKHIPGHGRATVDSHIELPILDTSLKTLEDTDFKVFKELAKYDYIKLA MTAHVIYTALDPDNPATLSQIVIDYIKSNIGFKGLIISDTIEMQALSGSWADITKGAL DAGVDIVLECTGEFNKMSEVLGSVAENSIDKFSDLFIS"

complement(14552. .15025)

Jene-"RP707"

/gene-"RP707"

/gene-"RP707"

/gene-"RP707"

complement(14552..15025)

/gene="RP707"

/gene="RP707"

/codon_start=1
/transl_table=11
/transl_table=11
/product="unknown"
/product="unknown"
/protein_id="CAA15142.1"
/db_xref="GI:3861243"
/db_xref="GI:3861243"
/translation="MINNKLTKKYYVASEVIRILNIALHKLRYLETKIPGLSHYKINN RKYYTAHDIDLLQKFLFVSRREEYLEVRGYHRSDKDYLANFSNIHCASDTSRQNEFQG KNSECILNKLHVQQRQDEQSAVVLSLMDNTVSSRIDILLINFHNLSIQIKKILLIS"
complement(15220..15507)

KNSECILNIHVQQRODSQSAVLSLADNITVSSRIDILLTNFHNLSIQIKKILLIS"
complement(15220. .15507)
/gene="RP708"
complement(15220. .15507)
/gene="RP708"
/codon_start=1
/transl_table=11
/transl_table=11
/product="INTEGRATION HOST FACTOR ALPHA-SUBUNIT (hima)"
/protein_id="CAA15143.1"
/db_xref="GI:3861244"
/translation="MTITKRKISLALSSKLGFSNNLCEAIVNTVFSNILEIAKVQKLTLNNGSFEVKQKTPRPGINFHTKSPVMIASKKNLRFTPSEKLKALINKSML"
18405. .18701
/gene="RP709"
18405. .18701
/gene="RP709"

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                          RESULT 5
AL646071
                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  173002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  172645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   172882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               172705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCGTTACAACAAACAGGAACGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCC 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTAGCGGTAGTAACATAGAATGGCGCAATCCAGATAACGGCAATCATGGTTACGTCACA 172881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTAGGTGTAGGCGCATTACTTGGGGCAGTTCTTGGTGGACAAATCGGCGCAAGTATG 172764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATG 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGGCGCAGGAGGTGCATTACTTGGTTCTCAATTCGGTCAAGGTAAAGGACAACTTGTC 172704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCAAGTTGTGA 173014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCAGGTGATTA 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGC 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTAATAAAACTTATAGGAACAGTGCAGGTCAATATTGCCGTGAATACACTCAAACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTAC 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGAGCAGGATAGAAGACTTCTAGAACTAACATCACAAAGAGCTTTA---GAATCTGCA 172821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTT 279
                                                                                     segment 15/19.
AL646071 AL646052
AL646071.1 GI:17
        Ralstonia solanacearum.
                                                                                                                                                                                                             AL646071
Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VIEVSLDLDNSSDDASIINKKAITVTSDDIANSNEDAARNTNKSHGDVLRCYYQ" complement(19685. .20789)
/gene="RP710"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(22602.
/gene="RP712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(21112.
/gene="RP711"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(21112.
/gene="RP711"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(19685. .20789)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(22602. .23066)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         authentic in-frame termination codons. Homology to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation-"MSIEKEKFWASHKQVVKEIGGTNLINGKHDLFKAVAYTSDDIEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to resolvase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transposase."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="unknown"
/protein_id="CAA15144.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /protein_id="CAA15145.1"
/db_xref="GI:3861246"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="RP712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Pseudogene with one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Pseudogene with two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="RP710"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MAVGRQYIEDHTEQLHKLCDNLVKYIELETKAITHEKAAEDTEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="GI:3861245"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                             203050 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45; DB 1; Length 237
Pred. No. 1.4;
0; Mismatches 195; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .23066)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .21608)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .21608)
                                                                                                                                                                                                                  chromosome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 237523;
                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     authentic frameshift. Homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           authentic frameshifts and
                                                                                                                                                                                                         complete
                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                    BCT 07-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    four
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (05-DEC-2001) Genoscope and CNRS UMR-8030, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biologie Moleculaire des Interactions Plantes-Microorganismes INRA-CNRS, BP27, 31326 Castanet-Tolosan Cedex, France, Fondation Jean Dausset-CEPH, 27 rue Juliette Dodu, 75010 Paris, France, LMGM CNRS 118 Route de Narbonne, F 31062 Toulouse Cedex 4 Genoscope and INRA URGV, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biometrie et Intelligence Artificielle INRA, BP27, 197376 Contract Company Contract Company Contract Company Contract Company Contract Co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 203050)
Salanoubat, M., Genin, S., Artiguenave, F., Gouzy, J., Mangenot, S., Arlat, M., Billault, A., Brottlier, P., Camus, J.C., Cattolico, L., Chandler, M., Choisne, N., Claudel-P. Renard, C., Cunnac, S., Demange, N., Chandler, M., Woisan, A., Robert, C., Saurin, W., Schiex, T., Gaspin, C., Lavie, M., Winsan, A., Robert, C., Saurin, W., Schiex, T., Siguier, P., Thebault, P., Whalen, M., Wincker, P., Levy, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ralstonia solanacearum
Bacteria; Proteobacteria; beta subdivision; Ralstonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INRA, BP27, F31326 Castanet-Tolosan Cedex
Christian.Boucher@toulouse.inra.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Boucher, C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://sequence.toulouse.inra.fr/R.solanacearum.html.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F31326 Castanet-Tolosan Cedex. Laboratoire de Genetique Cellulaire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome sequence of the plant pathogen Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Weissenbach, J. and Boucher, C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Raistonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 203050)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /function="elements of external origin; plasmid-related functions non-bacterial functions" /notes possible functions on fidence : putative Gene name confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="RSC2606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(1052. .1327)
/gene="RSc2607"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(1052. .1327)
/gene="RSc2607"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSCRIPTION REPRESSOR PROTEIN"
/protein_id="CAD16313.1"
/db_xref="GI:17429628"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         predicted by predicted by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(180. .1025)
/gene="RSc2606"
/evidence-not_experimental profess. Pro
                                                                                                                                                                                                                                                                                          predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="mSSPPGQALPQREQLDLFRALPGDMAPRDSQDLMAFPFFSLAKS
RRTAPIDFRAGGITIRVEGTAEHGIATIWDADVLIWAASQIVEARDAGIRPSRWIRAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  predicted by Codon_usage
                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                predicted by FrameD"
                                                                                                                                                                                                                                                                                                                    /function="miscellaneous: hypothetical/partial homology"
/note="Product confidence : hypothetical
Gene name confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RS00855"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTARG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WQFDFKHLHRKSGSAARFSDFAYDLRALVARQSLPGYVLGIERMPDGGQELLTFRPVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PYEILRFIGRSTSLNDYQRLKAALDRLQSTSIATSIRETTGRRLHRFSWINEWRELAD
ASGKPLGIELILPDWFYAGVLDAALVLTIDPAYFRLKGGIERWLYRLVRKHGGRQEHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=not_experimental
/product="HYPOTHETICAL REPLICATION INITIATOR AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="RS00854"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain-"GMI1000"
                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ∕organism="Ralstonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .203050
                                                                                                                                                                                                                                                                                      by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / Homology
/ FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           solanacearum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group;
```

밁 δõ В Ş 밁 Ş В 8 В Ş В

Š 밁

FOCUS

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                CDS
                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MTERPLSCFYGNPHLRIPTEPGNRIRVFPASDNSASVLPFFCGG
DGLH RASTRWHRYGSTVLCFGTRAHPRIVGFVRRLPMTLPLVTADERAFLLAHGAAL
AAGGRLDPLPVVRLFTPDAHYTMLIVSLDPADGDTAYGLIDLGIGLPSLGTVKLSDLA
GIVGPRKLPVRRDRYFQAAHLLSEYVRLAQENGAITD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental complement(2557...3150) /gene="RSC2609"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(1442. .2212)
/gene="RSc2608"
                                                                                                                                                                                                       TLHKLTELCEVMDVHPLTLLTLAFAGDSTRKADELLAQVRQELEAVLNSDGD
                                                                                                                                                                                                                                                                                                                                                                                           predicted by Codon_usage
predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="miscellaneous; not classified regulator"
/note="Product confidence : putative
Gene name confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
/evidence=not_experimental
/evidence=not_experimental
/product= PROBABLE LIPOPROTEIN"
/protein_id="CAD16316.1"
/db_xref="GI:17429631"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene name confidence : hypothetical predicted by Codon_usage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(2557. .3150)
/gene="RSc2609"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WHKDSALRARVRRLVRRGEALMRGGYRRLAQLPLLPLQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRKQLIHDGKRLVLVSHWPGCCLRLALAPGLEDGMAYLYATRACATPCARYRTLTAEL
DALATATVAAPTAAARSRPTLAAVLELHTLQALDATLAGASLREVAVGLFSADAVAAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MTDRSAEHWYPTAAYLYVLHLDGPALAWEYLRRNPDYRRDWLRR
RRRPDAAQVWGLRLLEDPALDARDAHPAWFPDHDAVVQLYPDADPPPEAHAFEFWRVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="HYPOTHETICAL/UNKNOWN PROTEIN"
/protein_id="CAD16315.1"
/db_xref="GI:17429630"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gene name confidence : hypothetical predicted by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(1442. .2212)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="mrpaplrpaaaapaQpQrylTnDeaaeylrlsprTleKQrvvGG
GPKERKFGRRVMYAYSDLDAWADQRSYEATSDPEYAERHAGDYRDGR"
predicted by Codon_usage
                                        /function="miscellaneous; unknown"
/note="Product confidence : hypothetical
                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="PUTATIVE TRANSCRIPTION REGULATOR PROTEIN"
/protein_id="CAD16317.1"
/db_xref="G1:17429632"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /function="miscellaneous; hypothetical/partial homology"
/note="Product_confidence : probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="RS00858"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="ACUR or RS00937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /function="miscellaneous; hypothetical/partial homology"
/note="Product confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="RS00857"
                                                                                                                                                         /gene="RSc2611"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="RS00859"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="RSc2610"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                        /gene="RSc2611"
                                                                                                                                   note="RS00860"
                                                                                                                                                                                                                                 translation="MAAKYSLAKALKTVRKARGLSQEAFSDVSSRTYMSTLERDLKSP"
                                                                                                                                                                                                                                                                                                                                               transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="RSc2610"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=
                       name
                                                                                                                                                                                      .4085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8108
                     confidence : hypothetical
                     VERSION
KEYWORDS
                                                                                                                                      RESULT 6
RSU76907
                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                     QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
SOURCE
                                                                                        DEFINITION
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                          Db 105960
                                                                   ACCESSION
                                                                                                                   Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                 106020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                       387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90;
Rickettsia
                                                                     U76907
```

```
327 GGTTCGCACCTACCAGCGTTACAACAAAACAGGAACGCCGTCAGCAGTACTGCCGCGAATT 386
                                                                                                                                                                                                                      GCCGGATGGCCGCTGGCAGGTG
                                                                                                                                                                                                                                                                                                         TCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCA 446
                                                                                                                                                                          GCCGGACGGCACCTGGCAGATG
                                                                                                                                                                                                                                                                  GETGGGGCAAGCCGAGATCGACGGCGTGATGCAGCAGGTCAGCGCGCACGGCGTGCCTGCA
U76907.1
                                       Rickettsia sp. 17kDa
                                                              RSU76907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="miscellaneous; hypothetical/global homology"
/note="Product confidence: hypothetical
Gene name confidence: hypothetical
predicted by Codon_usage
predicted by Homology
predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(5305..5619)
/gene="RSc2613"
/note="RS00913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="miscellaneous; unknown"
/note="Product confidence: hypothe
Gene name confidence: hypothetical
predicted by Codon_usage
predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(5305. .5619)
/gene="RSc2613"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="RS00912"
4107. .4955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MAYRNGNYTAFYVAEPFHPSSLGANATKDFQYYNTLRMWKGADA
TFPFVDSHDKTYSVRDGSDWEYTLKPRLRERLRSSKNIILLSSITTNSRALREEIDY
GINNOGLPVIVIYPEYATKESLLVDGSLKQAVKNLWGNLPVFRDSMSKIPTLHVPMNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/evidence=not_experimental
/product="CONSERVED HYPOTHETICAL PROTEIN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SARNGY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MIHVMAKVNFFDKRVIKKFLEITAVVSGTLSFIVIFVDVPAEWK
LRAGLAFLALIALTVVIWLKANNLNSIDINVGGSDVALKTGD1FQQPGLKAIAFEKF
FDPQVDNKIIGETSLKGVFIQKHLGVBISELDRYIEBYAFDESBVLEBBBARKYGKK
RYQIGTICLYKDYLLTAFSKFDENNKALLTMPEYLEFLINFWDKVNNVYAQQSVSTTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="HYPOTHETICAL TRANSMEMBRANE PROTEIN"
/protein_id="CAD16319_1"
/db_xref="GI:17429634"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence-not_experimental
/product="HrPOTHETICAL/UNKNOWN PROTEIN"
/protein_id="CAD16318.1"
/db_xref="GI:17429633"
GI:2894794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELIKKSLQDGEFMVGSMKAPDIYRYNP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FGSGITRIKGHKNISDEDLLKIMLWTFRISEMRFKYPAKLTIVIHKDKIDQINLLDIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4107. .4955
/gene="RSc2612"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="RSc2612"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.98;
56.38;
                                                                                                                                                                                                                      468
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42.8; DE Pred. No. 4.7; 0; Mismatches
                                         common-antigen
                                                                                                                                                                          106041
                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                448 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DВ
                                       gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                               62;
                                       partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 203050;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                BCT 18-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                  106019
                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                       RESULT 7
AL646061
LOCUS
                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                               ő
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                              밁
                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         147
                                                                                                                                                                                                              422
                                                                                                                                                                                                                                                                                                                                                                              304
                                                                                                                                                                                                                                                                                                                                                                                                                       327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         207
                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                                                                     387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGACGACTTGCTGCGGTAGGAGCAGGTGCGTTACTTGGTGCAATCCTTGGCAACCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTCTGATTGGCTCTAAAAT 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGCGCGCCACCGGTGCGGTTGTGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTC 146
                                                                                                                                                                                                                                                                                                                            TCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCA 446
                                                                                                                                                                                                                                                                                                                                                                              GTACTGTGACACCAAGCAAAGCTTATAAAAAATAATACCG--GTCAATATTGTCGTGAATA 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTGCAGGTATGGATGAACAAGATAGAAAACTTGCAGAGCTTACTTCTCAAAGAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAA 266
                                                                                                                                                                                                                                                   GCCGGATGGCCGCTGGCAGGTGATTA 472
                                                                                                                                                                                                                                                                                            GGTTCGCACCTACCAGCGTTACAACAACAGGAACGCCGTCAGCAGTACTGCCGCGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTACGCTAATTGGCGGAACTTTAGGAGGACTTGTTGGTTCACAATTTGGTGGTGGTAC 124
                                                                                                                                                                                                            ACCTGATGGACAATGGCAAGTTGTGA 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGA-AGCTGCACCAAGCGGTAGCAGTGTACAATGGCGTAATCCTGATAATGGTAATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ying, Z. and Davis, M.J.
Direct Submission
Submitted (01-NOV-1996) Tropical Research and Education Ce
University of Florida, 18905 SW 280 Street, Homestead, FL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Davis,M.J., Ying,Z., Brunner,B.R., Pantoja,A. and Ferwerda,F.H. Rickettsial relative associated with papaya bunchy top disease Curr. Microbiol. 36 (2), 80-84 (1998) 98087556
                       Ralstonia solanacearum segment 5/19.
AL646061 AL646052
AL646061.1 GI:17427781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiaceae; Rick
1 (bases 1 to 448)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia sp.
                                                                                                         AL646061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 448)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VTPSKAYKNNTGQYCREYTQTVVVGGKQQKAYGTACRQPDGQWQVV"
81 c 120 g 112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="ALAASMLEACQGPGGMNKQGSGTLIGGTLGGLVGSQFGGGTGRL
AAVGAGALLGAILGNQIGAGMDEQDRKLAELTSQRALEAAPSGSSVQWRNPDNGNYGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="17 kDa common-antigen"
/protein_id="AAC02809.1"
/db_xref="GI:2894795"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \db_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=3
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Puerto Rico"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.6%;
47.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    xref-"taxon:789"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 41.6; D
Pred. No. 8.3;
                                                                                                         198050
                                                                                        GMI1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp."
                                                                                      chromosome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 448;
                                                                                 complete
                                                                                                         BCT 07-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center, FL 33031,
                                                                                                                                                                                                                                                                                                                                                                                                                       386
                                                                                                                                                                                                                                                                                                                                                                                                                                                              303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arlat,M., Billault,A., Brottier,P., Camus,J.C., Cattolico,L., Chandler,M., Choisne,N., Claudel-Renard,C., Cunnac,S., Demange,N., Gaspin,C., Lavie,M., Moisan,A., Robert,C., Saurin,W., Schiex,T., Siguier,P., Thebault,P., Whalen,M., Wincker,P., Levy,M., Weissenbach,J. and Boucher,C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (05-DEC-2001) Genoscope and CNRS UMR-8030, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biologie Moleculaire des Interactions Plantes-Microorganismes INRA-CNRS, BP27, 31326 Castanet-Tolosan Cedex, France, Fondation Jean Dausset-CEPH, 27 rue Juliette Dodu, 75010 Paris, France, LMGM CNRS 118 Route de Narbonne, F 31062 Toulouse Cedex 4, Genoscope and INRA URGV, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biometrie et Intelligence Artificielle INRA, BP27, F31326 Castanet-Tolosan Cedex, Laboratoire de Genetique Cellulaire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (05-DEC-2001)
Cremieux, CP5706, 91057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Christian.Boucher@toulouse.inra.fr
http://sequence.toulouse.inra.fr/R.solanacearum.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INRA, BP27, F31326 Castanet-Tolosan Cedex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Boucher, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ralstonia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ralstonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 198050)
                                                                                            predicted by Codon_usage
predicted by Homology
predicted by FrameD"
/codon_start=1
                                                                                                                                                                              /gene="RSc0771"
-FC. number="1...."
-FC. number="1...."
/function="small molecule metabolism"
/functe="product confidence: putative
Gene name confidence: hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence-not_experimental
/product="putATIVE TRANSMEMBRANE DEHYDROGENASE (SMALL
/product="putATIVE TRANSMEMBRANE DEHYDROGENASE (SMALL
SUBUNIT) OXIDOREBUCTASE PROTEIN*
/protein_id="CAD14472.1"
/db_xref="G1:17427782"
/tcans1ation="MHTRPPSSDGDDPAGLTRROWLQSALAATAASLVGSVTLYAVAQ
APGEPLDAFMGLSQALTARSALDRAVGARLLAALQQASAGFAAQLRPLAQSLAAGTLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Product confidence : putative Gene name confidence : hypothetical
/evidence=not_experimental
/product="PUTATIVE TRANSMEMBRANE DEHYDROGENASE (LARGE SUBUNIT) OXIDOREDUCTASE PROTEIN"
/protein_id="CAD14473.1"
                                                                                                                                                                                                                                                                                                                                                                                             GLQQETALRILQAWYTGVVDGTVVTYEQALMYGVVSDILVIRTYCPNRPGFWAEPPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          predicted by Codon_usage
predicted by FrameD"
                                                                                                                                                                                                                                                                                                             /note="RS05083"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="RSc0770"
/EC_number="1.-.-.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Raistonia
/strain="GMI1000"
                                                                               transl_table=11
                                                                                                                                                                                                                                                                                                                                   /gene="RSc0771"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="RS05084"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ∕gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     function="small molecule metabolism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 to 198050)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .198050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSc0770"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  beta subdivision; Ralstonia group;
```

CDS

gene

```
/evidence=not_experimental
/product="putative Oxidoreductase Dehydrogenase
(CYTOCHROME C SUBUNIT) SIGNAL PEPTIDE PROTEIN"
/protein_id="CAD14474.1"
/protein_id="CAD14474.1"
/db_xref="GI:17427784"
/db_xref="GI:17427784"
/translation="MRRAKAASFILLSVLGAAAAARDADAPADAAQIKRGEYLAIAGD
CVACHTAPGGKPFAGGLEDQIEMLGTIYSSNITPDPKTGIGKNRYEDEERAVRGGVSD
DGENLYPAMFYPSYAKINDADMRDLYAYFRYGVAAVQYAPPPGTIRWFLNMRWPLKIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gene name predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="maetrqaeqadivvvgsgvagalvayelaragksvlmleagprl
prwelverfroqabkwbfmapypstpmaphpexgbdnnytlikoghkfdsqviravgg
TTWHWAASTWRFLPNDFKLRSVYGIARDWPIQYDDLERYYGRAEAALGVWGPNDEEL
SPRSQPYPMAPLPLSFNERTVKDALMHDPALAVVTEPVARNSRPYDGRPTCCGNNNC
MPICPIGAMYNGIVHVEKAEQAGARLIENAVVYKLEVGAGKRIVAAHYKDPKGVDHRV
                                                                                                                                                                                                     WRYEOFTGRVGGSDLGGTLTFAMRPEPGQRPQLTGELVSHOLLFADLAPIIGADSNAS
KQRRDAP VROPADKYLPVEPFRTDRWALIDADVKFTGERIVRTADLFIDHLVTHIKLQ
DAVLTLDPLUFGVAGGTLTSSULRLGOSAPMAQKSAALAARHKKIRQLFPUIESMHASI
GEINGDARLSATGNGVAALLGASNGELKILVEQGTVSKFILEAMGLNVGNVILTKLFG
                                                                                                                                                                                                                                                                                                                            TFVLEALPLLAHRIVIPSVTLDTPMIALERDSQNRNNWTFHFGAQDSQPSDWKLELRE
IAFSKGVQLDDEVKRIHLAATLDTVDNQALYTAASGTAIRGSPAAPASAGAAASTA
PAAPDPQQYGLAWTYKGYYNNAAIRGSKAAGVLRLQDARRPYPLQADVTVGKYRID
LAGTLTNPSSLTALDLRLHLSGASMAHLYPLTGVVLPDTPPFDTRGRLIGELRRQGSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental 
/product="probable Transmembrane Protein" 
/protein_id="CAD14475.1" 
/db_xref="G1:17427785" 
/translation="MRTSARVILGLGITPIVIVAAAIVFVLTFDWNRAKPYLNDHVSQ 
AVGRPFAINGDLALTWKKPEGESGWRAYVPWPRLIASDIAIGNPDWARQPHVATVQRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           predicted by Homology predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(3559. .5781)
/gene="RSc0773"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LSDAQLAALANYVTRQFGDPATPALTADEIAKRRMPQ"
complement(3559. .5781)
/gene="RSc0773"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NLAFLKRAPYLPKGDMTPTWNRGAYLAQGLAHCGTCHTPRGFAMQEKAMDERGKGYLA
GSTLAGWSAYNITSDPVSGIGGWKPEQIVQYLRTGSVPGIGQAAGPMGEAVQHSFSRM
TERDVRAIAEYLRTVPAVSTGAQRARHGWGTPATDVIALRGKPIETTIDAARLYLGNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     predicted by Homology
predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         electron transport"
/note="Product confidence : putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               {	t EVYATAARVLGGTDVQFHDDFAPNNHITGATIMGSDPKDSVVDKDCRTFDHPNLFISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGRGPQEMTSLIGFRDGPFRATQAGKKLHLSNISRIEQETTRIFKAGKLLKPAELDAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          {	t EGKWFVLAANG\,IETPKLMLMSTGADFPKGVGNRSDMVGRNLMDHPGTGVSFYADRKLW}
                                                                                                                                                DKQVSINCAAGDFAVSDGLAQARTFVVDTQDAVIDVTGATSFKHESLDFTIHPDSKGL
RVFSLRTPLYVKGTYKHPDVSVNPAVVALRAGGAVALAFAAPVAAVLPVLELQPAPDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /function="miscellaneous; hypothetical/global homology"
/note="Product confidence : probable
Gene name confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RS05082"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SATMPTVGTVNVTLTIAALALRIADQLKKEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IRDQAARYVQFDSFHEILPLPENRIVPSATGTDALGIPRPEITYRIDDYVKRSAVHTF
                                                                                                                PCGKLLADVRQRPTAPPPGKVYRSGQTGRAADGSPKDPAAAPARQPALPLRDPTTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="RS05081"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCHQADGRGTPDGYYPPLLHNSAVGARDTRNLVQVMLHGIERRAGDRHIGMPAFGRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="RSc0772"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="GI:17427783"
/note="RS05080"
                     /gene="RSc0774"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /function="small molecule metabolism; energy transfer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EC_number="1.-.-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="RSc0772"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 3552
                                                        .6785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             confidence : hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    by Codon_usage
                                                                                          AL646079
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                              Db 135979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
VERSION
                               ACCESSION
                                                                                    DEFINITION
                                                                                                                                                                                                                                                                       Db 136039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                  181
```

CDS

gene

gene

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                121 GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGGCCACCGGTGCGGTTGTGGGCGGTGTT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                            CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAG 213
                                                                                                                                                                                                                                                                     CTGGGTGCCCTGGCGGCCAATCAGGTGGAGCGG 136071
                                                                                                                                                                                                                                                                                                                                                                                         GCTCCGGCCAACAGCCCCGGTATTCTCGGCACCATCATCGGCGGCGTGGCGGGTGGCGTG 135978
Ralstonia solanacearum GMI1000
segment 4/11.
AL646079 AL646053
AL646079 1 GI:17430956
                                                                                                                      AL646079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /function="miscellaneous; hypothetical/global homology"
note="product confidence: probable
Gene name confidence: hypothetical
predicted by Codon_usage
predicted by Homology
predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OXIDOREDUCTASE PROTEIN"
/protein_id="CaD14477.1"
/protein_id="CaD1477.1"
/db_xref==01:1742787"
/translation="MGPEPEAAGIEEQGLGWSSRFGTGKGTDAITSGLEVTWITTPTQ
/translation="MGPEPEAAGIEEQGLGWSSRFGTGKGTDAITSGLEVTWITTDLSIRF
WSNNFFQNLFCYEWELTKSPAGAAHOWVARDAETIPDAHDPSAKHLPTWLTTDLSIRF
DPAVEXISRRFYEHPEGFADAFRAKFKLTHADDETAAPALGFEVPAEALHWQDDFTA
DPAVEXISRFYEHPEGFADAFRAKFKLTHADGTAAPA
VDHKLIDTQDIAALKARILASGLSVSQLVSTAWASASTFRGSDMRGGANGARIRLAPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transI_table=11
/evidence#not_experimental
/product="probable Transmembrane protein"
/protein_id="CAD14476.1"
/protein_id="CAD14476.1"
/db_xref="G:17427786"
/db_xref="G:17427786"
/translation="mshyaisapahppalDDEYARREGGVARLYGPQALERFAAAHIC
/translation="mshyaisapahppalDDLDHIAVSUTNBQIHALGDAYCKKVDAMAER
VIGUGGVGSWVAEALARCGIGRLTLIDLDHIAVSUTNBQIHALGDAYCKKVDAMAER
VIGUGGVGSWVAEALARCGIGRLTLIDLDHIAVSUTNBQHAVKVKTAIVAFCQRTGTTVV
TCGAAGGQLDFTRIRVADLARTIQDFLLAKVRGNLRRQHGFPRDFARFGIDAVYSDE
PLRYPEPPEQACAVEVPAESSHAGIDDLAAAGAIEVVNAPPAPQPSRGPQGLACAGFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene name confidence : predicted by Codon_usag predicted by Homology predicted by FrameD*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="katGb"
/note="RSC0775; RS05079"
complement(6890. .8257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KDWEANQPAQLAKVLETLES IQGAFNGAQSGGKKVSLADLIVLAGCAGVEQAAKNAGH
AVEVPFTPGRMDAAQAQTDVESFAVLEPIADGFRNYQKGKYTLPAEALLVDKAQLLTL
TAPEMTVLVGGLRVLDTNIGQTRHGVFTQRPESLTNDFFVNLLDMGTEWKATDGRDVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /function="cell processes; protection responses;
detoxification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(6890. .8257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSVCVTAVFGMVAASTALRAIAAV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGRDRATGALKWTGTRVDLVFGSHSQLRALAEVYGSADAQAKFVRDFVAAWDKVMNLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="PROBABLE PEROXIDASE/CATALASE (CATA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Product confidence :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="katGb"
/EC_number="1.11.1.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="RSc0774"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41; DB 1; Length 198050; Pred. No. 13; 0; Mismatches 70; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Codon_usage
                                                                                                                            213050
                                                                                                                      đď
                                                                                        megaplasmid,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           putative
                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               probable
                                                                                                                         linear
                                                                                              complete
                                                                                                                      BCT 07-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                           sequence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (05-DEC-2001) Genoscope and CNRS UMR-8030, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biologie Moleculaire des Interactions Plantes-Microorganismes INRA-CNRS, BP27, 31326 Castanet-Tolosan Cedex, France, Fondation Jean Dausset-CEPH, 27 rue Juliette Dodu, 75010 Paris, France, LMGM CNRS 118 Route de Narbonne, F 31062 Toulouse Cedex 4, Genoscope and INRA URGV, 2 rue Gaston Cremieux, CP5706, 91057 Evry Cedex, France, Laboratoire de Biometrie et Intelligence Artificielle INRA, BP27, F31326 Castanet-Tolosan Cedex. Laboratoire de Genetique Cellulaire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Salanoubat,M., Genin,S., Artiguenave,F., Gouzy,J., Mangenot,S., Arlat,M., Billault,A., Brottier,P., Camus,J.C., Cattolico,L., Chandler,M., Choisne,N., Claudel-Renard,C., Cunnac,S., Demange,N., Gaspin,C., Lavie,M., Moisan,A., Robert,C., Saurin,W., Schiex,T., Siguier,P., Thebault,P., Whalen,M., Wincker,P., Levy,M., Weissenbach,J. and Boucher,C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INRA, BP27, F31326 Castanet-Tolosan Cedex Christian.Boucher@toulouse.inra.fr http://sequence.coulouse.inra.fr/R.solanacearum.html.Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 213050)
Boucher, C.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome sequence of the plant pathogen Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; beta subdivision; Ralstonia group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ralstonia solanacearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 213050)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="RSp0487"
/note="RS00365"
100. .1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /plasmid="megaplasmid"
/strain="gMI1000"
/db_xref="taxon:305"
100...1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="HYPOTHETICAL TRANSMEMBRANE PROTEIN"
/protein_ld="CAD1763B.1"
/db_xref="GI:17430957"
/translation="MDAPFSGREAVIRRAVGRILLVLVVGLAVLAVCIAFNTWRHDSR
/LTANSLAVDGAAAAARIGEAIRARTISSFTDAQQNADQFRQLHAMLAARYPKAH
AAMQREPVGDESILYTWKGSDPSIKPILLMAHQDVVPVAPGTEGDWTEPPFAGVVKDG
MVWGRGAWDDKGNIIAQMEARELLAASGFRPRTITFAFFGADEEVGGERGAARIAALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gene name confidence : hypothetical predicted by Codon_usage predicted by Homology predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /function="macromolecule metabolism; macromolecule degradation; degradation of proteins, peptides, glycopeptides" confidence: hypothetical
                                                                                                                                               complement(1751. .3148)
/gene="czcS"
/note="RSp0488; RS00366"
complement(1751. .3148)
                                                                                                                                                                                                                                                                                                                                  RKQLQASPSTNAVLQTTTALTIVQAGNKDNVLPGRAEATVNFRLLPGDSASSVIAHVE
QAVRSAVPKGHFELAALPGVSEAAPVSPTQSASYQLIGRTVREVFPGTVVAPGLMVGA
                                                                                                                                                                                                                                                                                                                                                                                              KSRGEQLAFVIDEGLLITEGVVPGLTKPAALIGVTEKGFLSVALKLSATPGHSSMPPA
PGESAIAMMSAALKHLDDQQLPAGIRGVTREMFETLAPEMRGLNRVALSNLWLFEPLV
                                                                                                                                                                                                                                                                                                     TDSRHMIGISDHVFRFSPVRARPEDLARFHGTNERISEANLVELIRFYHRLIHQAADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="RSp0487"
                            /function="cell processes; protection responses"
/note="Product confidence : probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
confidence : probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
```

```
4089. .4394
/gene="RSp0490"
/note="RS00368"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /protein_id="CAD17639.1"
/db_xref="GI:17430958"
/db_xref="GI:17430958"
/translation="mmrwpaslaarlvlaevlvagvmltgagtylyyalnaqlratdd
/translation="mmrwpaslaarlylaevltagdhecglilrvlgddgrtlyeanpe
AMLLGKIVQLRHCAKDTQSIDDIVRDARRYTEVVSGHECGLILRVLGPDGRTLVEANPE
GEPVAAPPAAVPPDVLASESALHTWWSRTGIASRAIAAQARLGNHRDTYTYLVAQDGDS
                                                           predicted predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
/product="PROBABLE RESPONSE REGULATOR FOR COBALT ZINC
CADMIUM RESISTANCE TRANSCRIPTION REGULATOR PROTEIN"
/protein_id="CAD17640.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="RSp0489; RS00367"
complement(3145. .3819)
/gene="czck"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RAALMASYRRHIFLAVIAGVAAVALLSLMLVRSTLKGLARIGRQAASVVPSQLDTRLT
LEGAPRELSDLLAALMAMLTRLQDGFARLSQFSADLAHDFRTPLANLIGQTEVTLAHP
RPAGEYRAVLESSLEEYARLSRMIEDMLFLARADHARVALSVAPLDARHEIQVLVDYF
EAVAADRDITIQVCGNGRVRADLTLLRRAINNLLDNALRHTPGGARIDVAVQVLPHST
AIAVRNPGPGIPAASLPLLFDRFYRGDPARANSERSAGLGLAIVQTIMDLHGGTAQAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="probable Transmembrane
HISTIDIME KINASE FOR COBALT ZINC
TRANSCRIPTION REGULATOR PROTEIN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /genee "RSp0490"
/function="miscellaneous; hypothetical/global homology"
/function="product confidence: putative
/note="product confidence: hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="CAD17640.1"
/db_xref="GI:17430959"
/translation="MRLIVEDEPKAGDYLLKGLTESGFVADLARSGEDGLYOAMEHD
/translation="MRLIVEDEPKAGDYLLKGLTESGFVADLARSGEDGLYOAMEHD
YDLIVLDVMLPGMDGWQVIRELRRKTTPVLF1TARDELSDRLKGLELGADDYLVKPF
AFAELVARVHTILRRGPMRESEVLEIADLTIDTIKRRVTRACREDLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHLL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHL
AFAELVARVHTILRRGPMRESEVLEIADLTAKEYALLHL
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTAKEYALLH
AFAELVARVHTILRRGPMRESEVLEIAUNDLTA
                                                                                                                                                                                                       /function="cell processes; protection responses"
/note="Product confidence : probable
Gene_name_confidence : probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                predicted by Codon_usage
predicted by FrameD*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            predicted by Homology predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="cell processes; protection responses"
/note="Product confidence : probable
Gene name confidence : probable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="czcR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(3145. .3819)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPPGGLTEFRLIFPA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       predicted
                                                                                                                                                                 predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YTDGARGTRDPYTDGGAQAEATLQASVGPRDPYSDGGMSRSSAPRDRDPYTDGAQAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="PUTATIVE SIGNAL PEPTIDE PROTEIN"
/protein_id="CADJ7641.1"
/db_xref="GI:17430960"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ARRTGEVLSRSLISSQVWDVNFDSNTNVVDVAIRRLRAKVDDPFEHKLIHTLRGMGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                   /gene="czcC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="RSp0491; RS00369"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="czcC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       translation="MSVRRNCLLPLAAAAAFLACGAATAASVSEQALSPLQVHGARDP/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    transl_table=11
                                                           by Homology
by FrameD"
                                                                                                                                                                 by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SENSORY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CADMIUM RESISTANCE
```

```
ACCESSION
VERSION
                                                                                          RIRANT17KA
                                                                                                                      RESULT 9
                                                                      Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 72
                                                                                                                                                                                             20368
                                                                                                                                                                                                                                                                                                                                                                                          20248
                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                             205
                                                                                                                                                                                                                                                                                                                                                                                                                                       85
                                                                                                                                                                                                                                                                                                                                                                                       GTGGGCGCGGTGCTGGGCGGCGTGGTCGGCTGGTCGGACACCAGATCGGTGGCGGG 20307
                                                                                                                                                                                                                                             ATCG
                                                                                                                                                                                                                                                                                                                                        TCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGCGGTCTGATTGGCTCTAAA 204
                                                                                                                                                                                                                                                                                                                                                                                                                   ATCG
                                             R.conorii 17K genus-common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
72; Conserv
  M28480.1 GI:152457
                      M28480
                                                                      RIRANT17KA
                                                                                                                                                                                                                                             208
                                                                                                                                                                                               20371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=mot_experimental
/product="probable cobalt-zinc-cadmium resistance (cation
/product="probable cobalt-zinc-cadmium resistance (cation
/protein_id="cadl7643.1"
/protein_id="cadl7643.1"
/protein_id="cadl7643.1"
/db_xref="g1:17430962"
/translation="mflprogralalivalgalagaaluwwgmgarqaahaeseareop
/translation="mflprogralalivalgalanaalgveragaaglertevulpgeirun
AAHAEHAQAPKAEAAEAPHAETIAMTAEAIANAAIGVETAGAAGURTEUVLPGEIRUN
DDRTAHVVPRVAGVAEQVAVELGOPVTRGQLLAVLSSPALSDQRSELQAAQORLALAQ
EAHAREKRLWEDGIAAAQDYQQARTALOEARTADNARGKUAAIGAAPAGTALNREEL
RAPFDGVVVARHLSQGEAVQAEAAVETIADLRFVWADEAVTAKDLEAVTHATATYRA
TATGTAVQGKVSYVGALLGEQTTSAPARVTLDNPKRAWRPGMFVSVSVESGRVPVPVA
VRADAVQTVUEKPSVETVPVPAGFEVRPVKTGRSDGTWTEILDGLPAGTRXAAANSYVL
VRADAVQTVUEKPSVETVPVPAGFEVRPVKTGRSDGTWTEILDGLPAGTRXAAANSYVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /function="cell processes; protection responses"
/note="product confidence: probable
Gene name confidence: probable
predicted by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELSTAQERLRLAQASDALAAQAEAAAVRRVQAGKVSPVEQTKAAVARAGAATELRDAQ
ADLLVAQRALSAFWGGAVAVPEADGSAETLPAVPPEAHRVLAAATAAEPVALASTPRA
LRARLETEHRQALVNVERSKRVPDVTLSVGAKRDSGANANMAVVGTAVPLPLFDRNQG
SLLEAQRLADKAAEDYRALRLEQAAALSQDVARLEAARQAVGALRQDVLPGAGRAYDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /function="cell processes; transport of small molecules"
/note="Product confidence : probable
Gene name confidence : probable
predicted by Codon_usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        predicted by Codon_usage predicted by Homology predicted by FrameD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ARIGFEAGKFNFLDVLDAQRTLFQARAQYLAALSRAHQAAAGIDRILGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="mythpciraavalscallvrsglaaapageaaaasDtaapaaQs
apasvpgaahermtlqqaidralathpalaaagyavrasegavDqasrlknpeaaplt
eDvrrdratmtaqlniplelggkraartraaelardaacqdaavlaaelaadvtrafe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="CAD17642.1"
/db_xref="GI:17430961"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="PROBABLE COBALT-ZINC-CADMIUM OUTER MEMBRANE
RESISTANCE PROTEIN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KAEAGKSADHGH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5752. .6966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="czcB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="czcA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="czcB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RSp0492; RS00370"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="czcA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="RSp0493; RS00371"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .10171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 40.8;
Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                             DNA linear BCT gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 213050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

밁 Qy Вb δõ Вр QΥ

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                 DЬ
                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
              RIRANT17KD
                                 RESULT 10
Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity Matches 172; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -35_signal
-10_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 GGTGCGGTTGTGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCG
                                                                                522
                                                                                                                  460
                                                                                                                                                   462
                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                    340
                                                                                                                                                                                                                                                                                                                 280 ACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTAC
                                                                                                                                                                                                                                                                                                                                                      285
                                                                                                                                                                                                                                                                                                                                                                                    220 GACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTT 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                 160 ATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATG 219
                                                                                                                                                                                                                                                                                                                                                                                                                     225 GGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      165 GGCGGTGCTGGCGCGCATTACTTGGTTCTCAATTCGGTAAGGGCAAAGGACAGCTTGTT 224
                                                                                                                                                                                                                                                  CAGCGTTACAACAACAGGAACGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCC 399
                                                                                                                                                                                                                                                                                   CCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAACGGCAATTACGGTTACGTAACA 401
                                                                                                                                                                                                                                                                                                                                                    GATGAACAGGATAGA---AGACTTGCAGAGCTTACCTCACAGAGAGCTTTAGAAACAGCT
                                                                                  TGGCAAGTTGTGA 534
                                                                                                                TGGCAGGTGATTA 472
                                                                                                                                                   ATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGC 459
                                                                                                                                                                                                                    CCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGCCGTGAGTACACTCAAACAGTT 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R.conorii DNA.
Rickettsia conorii
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia; spotted fever gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
J. B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Anderson, B.E. and Tzianabos, T. Comparative sequence analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Draft entry and printed copy of by B.Anderson, 27-OCT-1989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89359171
RIRANT17KD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteriol. 171, 5199-5201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 539)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAA26376.1"
/db_xref="GI:152458"
/db_xref="GI:152458"
/translation="MKLUSKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
/translation="MKLUSKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLG
SQPGKGKGQLVGVGVGALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEW
RNDDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="1
120. .53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="17
60. .539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="17 kD antigen"
93 c 125 α 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:781"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Rickettsia conorii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="17 kD antigen precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start-1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.3%;
46.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .>539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 kD antigen signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 40.2;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            kD mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
   539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1989)
dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genus-common rickettsial antigen
   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kindly
     BCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                group.
     26-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                          339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           159
                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳
```

RESULT

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -35_signal
-10_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                               522
                                                                               460
                                                                                                                                 462
                                                                                                                                                                                   400
                                                                                                                                                                                                                                      402
                                                                                                                                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                        342
                                                                                                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                                                                                                                                         285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 GGTGCGGTTGTGGGCGGTGTTGCCGGCCACCTGTTCGGTAAAAGGCTCTGGTCGTGTGTCG 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCCCATCGGCGGTGCGGTCTGGGCGTCTGATTGGCTCTAAAATCGGTCAGAGCATG
                                                                                                                                    ATGATCGCAGGTCAGAAACAGGAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGC
                                                                                                                                                                                                                                                           CAGCGTTACAACAACAGGAACGCCGTCAGCAGTACTGCCGCGGAATTTCAGCAGAAAGCC
                                                                                                                                                                                                                                                                                                                                     CCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAACGGCAATTACGGTTACGTAACA 401
                                                                                                                                                                                                                                                                                                                                                                                    ACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGAACAGGATAGA----AGACTTGCAGAGCTTACCTCACAGAGAGCTTTAGAAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGGTGCTGGCGGCGCATTACTTGGTTCTCAATTCGGTAAGGGCAAAGGACAGCTTGTT
                             TGGCAAGTTGTGA 534
                                                                               TGGCAGGTGATTA 472
                                                                                                                                                                                                                                      CCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGCCGTGAGTACACTCAAACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
J. B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Draft
by B.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anderson, B.E. and Tzianabos, T.
Comparative sequence analysis of a genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettslaceae; Rickettsleae; Rickettsia; spotted fever gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R.rickettsia DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M28479.1 GI:152463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R.rickettsia 17K genus-common antigen gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 539)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriol. 171, 5199-5201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .Anderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry and printed copy of sequence Anderson, 27-OCT-1989.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="mkilskimiialatsmlqacngpggmnkqgtgtllggaggallg
$QFGKGKGQLVGVGVGALLGAVLGGQlGaGmDEQDrrlaEltsQraletapsgsnvew
RNPDNGNYGYVTPNKTYRNSTGQYCREYTQTVVIGGKQQKaYGNACRQPDGQWQVVN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="17 kD antigen"
92 c 125 g 143 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Rickettsia
/db_xref="taxon:783"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="AAA26379.1"
/db_xref="GI:152464"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="17 kD antigen precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="17 kD mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.3%;
46.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .>539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 kD antigen signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 40.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for [1] kindly submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fever group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω,
                                                                                                                                                                                                                                   461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219
                                                                                                                                                                                                                                                                                     399
                                                                                                                                                                                                                                                                                                                                                                                    339
                                                                                                                                                                                                                                                                                                                                                                                                                                       341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ب
د ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AE008675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                          CDS
                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                         repeat_region
                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A public version of R. conorii genome database is accessible at http://igs-server.cnrs-mrs.fr/. The database intends to provide updated data. Annotation of the genome is an ongoing task whose goal is to make the genome sequence more useful. Comments to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 (bases 1 to 10127)

Ogata, H., Audic, S., Renesto-Audiffren, P., Fournier, P.-E., Barbo Samson, D., Roux, V., Cossart, P., Weissenbach, J., Claverie, J.-M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ogata, H., Audic, S. and Claverie, J.-M Selfish DNA and the origin of genes Science 291 (5502), 252-253 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science.
20485642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (26-APR-2001) Unite des Rickettsies, Faculte de Medecine. CNRS UMR 6020, Universite de la Mediterranee, 27 boulevard Jean Moulin, Marseille Cedex 05 13385, France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ogata,H., Audic,S., Renesto-Audiffren,P., Fournier,P.-E., Samson,D., Roux,V., Cossart,P., Weissenbach,J., Claverie,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mechanisms of Evolution in Rickettsia Science. 293 (5537), 2093-2098 (2001) 11557893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Science. 290 (5490), 347-350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ogata, H., Audic, S., Barbe, V., Artiguenave, F., Raoult, D. and Claverie, J.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ĂE008675 AE006914
AE008675.1 GI:15620413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AEUU8675 10127 bp DNA linear BCT 14-SEP-
Rickettsia conorii Malish 7, section 107 of 114 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Raoult, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Raoult, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia; spotted fever gro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia conorii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    authors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AE008675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1030655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 10127)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is to make the genome sequence more useful.
                                            /gene="RC1277"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            are appreciated
                                                                                                                                                                                                                                                                                                        /transl_table=11
/product="methionine aminopeptidase [EC:3.4.11.18]"
/protein_id="AAL03814.1"
/protein_id="AAL03814.1"
/db_xref="GI:15630414"
/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNVTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSLNGL/translation="MTIKIHTGKDFIKMRAAGKLAAETLDFITDHVKPNTTNSL
                                                                                                                                                    complement(1064
                                                                                                                                                                                                                                                           WYGDTSRMYYVGDVAIKPKRLIQVTYDAMMKGIEVVRPGAKLGDIGHAIQSYAEKHNY
SVVRDYTGHGIGRVFHDEPSILNYGRSGTGLTLEEGMFFTVEPMINAGNYDTILSKLD
                                                                                                                                                                                                         complement (977.
                                                                                                                                                                                                                                GWTVTTRDKSLSAQFEHTIGVTKDGFEIFTLSPKKLDYPPY"
/gene="RC1277"
/codon_start=1
                                                                                                                            /note="REP02, RS3-like
                                                                                                                                                                              /note="REP03,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RC1276"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain="Malish 7"
/db_xref="taxon:781"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="map"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="map"
                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .10127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 890
                                                                                                                                                                              repeated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10127 bp
                                                                                                                                                                                                           .1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genes of Rickettsia (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  conorii"
                                                                                                                                                                              element"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conorii and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fournier, P.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BCT 14-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prowazekii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. -M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Barbe, V.,
J.-M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Barbe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e, V.,
and
```

8 밁 δÃ DЬ Š Вρ δÃ

밁 Ş

밁 Š 밁 δ В

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                              /product="unknown"
/product="unk
                                                                                                        complement(4505. .5188)
/gene="RC1282"
                                                                                                                                                                                       complement (4505.
                                                                                                                                                                                                          /note="REP03, repeated element"
                                                                                                                                                                        /gene="RC1282"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(3509. .4258)
/gene="RC1281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(3509. .4258)
/gene="RC1281"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alpha-N-acetylglucosaminyltransferase [EC:2.4.1.-]"
/protein_id="AAL03817.1"
/db_xref="g1:5620417"
/tzanslation="MNINSYSTLETISPISTALLTYILTKYLPTIGLVDIPSNRRSHD
KTTPRGGGLAIVFVVMIALSGFEXITSNNFVNSIKILPLLLAIASISFLDDLKAVPIL
IRLIVHLICAAFAIFLESQLNSVHILIYSILVIALSGFINIYNFMDGIDGNSCVESTH
LICSTMLILCFLOPPTINNPYFITSVNVILIGGSCGFLIFNWHPAKIFLGDVGSISLGF
LTGLLLLALTSTNLFLAGAJASLYITDAVLTILIKLLNKKENROPHLKHFEQKAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="unknown"
/proteain_id="aal03818.1"
/proteain_id="aal03818.1"
/db_xref="GI:15620418"
/tanslation="MKLIKEDIDKIVRHIFAKQHPLLPEIMINWNKIVGFNFSTKALP
LKITTYTYKKOKINTLFIQAEDNATAAELPYYQDIILERIKIYLGFAAIHQMNVTFYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="REP01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="REP02, RS3-like repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(3198.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="RC1280"
2792. .3115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QKGKSHKQVVSIIAVCNIFLMIISVTSLHFPVISIMLALAVITLTVQSLLK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /92. .3115
/gene="RC1280"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="undecaprenyl-phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="similarity to DNA repair protein (RadC)"
/protein_id="AAL03816.1"
/db_xref="GI:15620416"
/translation="MKQKIINKNINASWSSWIDYLKVNMGNNRLEQFRILFLNKKNIL
IADEVLSQGTIDQAAVEREIKRALFNEASSLILVHHHPSGSPEPSKANIHMTNKIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="mray2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="RC1279"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene≖"mraY2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="similarity to DNA repair protein (RadC)"
/protein_id="AAL03815.1"
/db_xref="GI:15620415"
/translation="MLENNLLEFSNDEIIDTPHYIGHRKRVKERFVAAGAEYFSDYEL
LEVMLFSAIPKKDIKPLAKKLLDHFDITDLINLDKERLLSIKGTNENLYINFALRELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1457.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1457. .1825
/gene="RC1278"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="RC1278"
1457. .1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeated element"
                                                                                                                                                                                          .5188)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .3227)
                                             Дb
                                                                                           Qy
                                                                                                                                                         Dβ
                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
8359 GATGAACAGGATAGA---AGACTTGCAGAGCTTACCTCACAGAGAGCTTTAGAAACAGCT 8415
                                                                                                                                                         8299
                                                                                                                                                                                                                                                                    8239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                    220 GACCAGCAGGATAAAATGAAACTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTT 279
                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                 GGAGTAGGTGTAGGTGCATTACTTGGAGCAGTTCTTGGTGGACAAATCGGTGCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                  ATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATG 219
                                                                                                                                                                                                                            GECGGTGCTGGCGGCGCATTACTTGGTTCTCAATTCGGTAAGGGCAAAGGACAGCTTGTT 8298
                                                                                                                                                                                                                                                                                GGTGCGGTTGTGGGCGGTGTTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCG 159
                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(7027. .7947)
/gene="p34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="p34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MNILLDKEANFUNFEMEOALKOAKIAFDKNEVPVGAVVVDRLHOKIASTHUNTEEKNNALYHAEITAINEAGNLISSKULNDYDIYVTLEPCAMCAAAIAH
SRLKRLFYGASDSKHGVVESNLRYFNSSACFHRPEIYSGILAEDSGLLMKEFFKRIRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RC1286"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="cytosine deaminase [EC:3.5.4.1]"
/protein_id="AAL03823.1"
/db_xref="GI:15620423"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="heme exporter protein C"
/protein_id="AALO3822.1"
/protein_id="AALO3822.1"
/db_xref="GI:15620422"
/translation="MLKLLTPYENKLSKVIIPILAISTCVMMIIGLYLALIVSPVDY
/QGDFYRIMYVHYPASMMALGVYVFMAVCSFSYLVMKTTISYLLAVASSYVGATETLI
SLVTGSLWGKPIWGTWWVWDARLTSMLILFLLYLSYIIIVNSADNIRKAQNPSSIIAL
IGLINIPIVKESVNIWYSLHQPASYLRLGSPTIHSSMLKPLITMFISFILYFLLVLLL
RTALLDKIKNR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(6540. .7046)
/gene="RC1285"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="RC1285"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(5833. .6525)
/gene="ccmC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(5833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DKFNKYIGSVKIAN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="RC1284"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="ccmc"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                translation="MTYVVTDECVKCKYTDCVEVCPVDCFYEGEREDDFMLVINPDEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="REP06, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="unknown"
/product="unknown"
/protein_id="AALO3820.1"
/db_xref="Gi:15620420"
/translation="MLIMKKLLLIAATSATMLSSSVSFAEGMDHEWYLRIDTGAAMFN
EEKDKATGYKLKSNTTYPVALGTGYYISENFRADLTLGTIIGGKLKKSGAATNAPFTR
TNISASHKPTITRLLINGYVDLTNFDMFDVFAGAGVGSALVKEKITYNGITGLSSNTK
NRTNISYKLTGTSAQIADGVKVELAYSWIDDGRTKSKNVIYQGTSVPTGGMHYQSHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDCGVCVPDCPIGAIKPESPGLIEWVERAKDFIENKGWKNITKKKTALPDADKFKDEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAL03821.1"
/db_xref="GI:15620421"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="ferredoxin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="fdxA"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(5478,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="fdxA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="RC1283"
                                                                                                                                                                                                                                                                                                                                                                                              8.38;
                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                     Score 40.2;
Pred. No. 19;
                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .7947)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 6525)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 5828)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .5508)
and T rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .5828)
                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                      198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeated element"
                                                                                                                                                                                                                                                                                                                                                                                                       Length 10127;
                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                ω,
                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                    8358
                                                                                                                                                                                                                                                                                                                                          1;
```

CDS

gene

gene

CDS gene

gene

CDS

```
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
AE004537
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGCGTTACAACAACAGGAACGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTAGTGGTAGTAACGTAGAATGGCGTAATCCGGATAACGGCAATTACGGTTACGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGCAAGTTGTGA 8608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCAGGTGATTA 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTAATAAAACTTATAGAAATAGCACTGGTCAATATTGCCGTGAGTACACTCAAACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stover.C.K., Pham,X.Q., Erwin,A.L., Mizoguchi,S.D., Warrener,P., Hickey,M.J., Brinkman,F.S., Hufnagle,W.O., Kowalik,D.J., Lagrou,M., Garber,R.L., Goltry,L., Tolentino,E., Westbrock-Wadman,S., Yuan,Y., Brody,L.L., Coulter,S.N., Folger,K.R., Kas,A., Larbig,K., Lim,R., Smith,K., Spencer,D., Wong,G.K., Wu,Z. and Paulsen,I.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stover, C.K., Pham, X.-Q.T., Erwin, A.L., Mizoguchi, S.D., Warrener, P., Hickey, M.J., Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    University of Washington Genome Box 352145, Seattle, WA 98195,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (16-MAY-2000) Department of Medicine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Westbrook-Wadman,S., Yuan,Y., Brody,L.L., Coulter,S.N., Folger,K.R., Kas,A., Larbig,K., Lim,R.M., Smith,K.A., Spencer,D.H., Wong,G.K.-S., Wu,Z., Paulsen,I.T., Reizer,J., Saier,M.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Complete genome sequence of Pseudomonas aeruginosa PA01, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa PA01, section
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hancock, R.E.W., Lory, S. and Olson, M.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          opportunistic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pseudomonas aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE004537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE004537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 13946)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 13946)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unistic pathogen
406 (6799), 959
                                                                                                                                                                                                                                                                           /gene="PA1047"
/codon_start=1
/transl_table=11
                                                /Translation="mprplshrnlpmtpgghcdsrfaplaeafarlfdnpgergaalc 
/EUGGETVVDLMGGVADKDGBQPMQRDTILNLFSCTKTFTAVAVLQLVAEGKLELDAP 
VAHYMPEPAAAGKAAISYRQLLCHRAGLPALREQMPTAVDMQAMTTALAAEEPWWT 
PGEAHGYAPTTYGWLLGEVIRRVDGREPGEAIVARTTAAPLGLDEHVGLDDSQFGRVAH 
MARSKGSLGDAAAQRMLKTMMSEPLALTTRAFTNPPSILTSTNKPEWRRMQQPAANGH 
GNARALAGFYSGLLQGRLLEDELLGQLAHEHAVGEDGTLLTRTRFGLGTMLDQPGVAN
                                                                                                                                                                                                                                                                                                                                                      /gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE004091
                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:287"
69. .1247
                    ATYGLGPKAFGHPGAGGSIGFADPERDLAFSFVSNALGPYVLMDPRAQQLARVAGECL
"
                                                                                                                                                                                                      /product="probable esterase"
/protein_id="AAG04436.1"
/db_xref="GI:9946961"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       /strain="PAO1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .13946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:9946960
                                                                                                                                                                                                                                                                                                                                                                             PA1047"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                959-964 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13946 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ent of Medicine and Genetics,
Center, University Of Washington,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NA linear BCT 30-AUG-
98 of 529 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BCT 30-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
/gene="PA1052"
/5759. .6904
/gene="PA1052"
/gene="PA1052"
/codon_start=1
/transl_table=11
/product="conserved hypothetical protein"
/protein_id="AnG04441.1"
/db_xref="cd:994966"
/translation="MKIVIAPDSFKESLSAPDVAEAIARGWRRVFPQAEVLLRPLADG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="PA1051"
4359. .5717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MFELDSTLAQHIVDRAMAILPHNINVMDAQGMIIGSGDPSRLHT RHEGAQLVLANRRVVEIDEQAAACLRGVRPGVNLPLLHAERLVGVLGTTGAPEVVRPY AELVRMAAEMLMEQQOMQDERHWQRQRHEAWHLGLLDPGLALAADAEHLGLAMHW PRQAVFLELPEHADPLCQARLLAALGGRAEHWSAALGERLVEWCRPVAHADFLEHWL ERADARGWGVARLCAGDPAHDLAELRASACAARDLLDYARSRLPGRRVVTLDGHRLAS LLFSQRDSWGVRQLLAPLQRLLDHDPQGSLAATLESWCAHDGHAQACAQALGIHRNSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="PA1049"
2433. .3080
                                                                                                                                                                                                                               5759
                                                                                                                                                                                                                                                                                                                                                   PIAAAGNLGLDASLGLVIVVGLVVAFVTAMAGMWWANRFVGKDIPLVDDGQVVQTEED
FSELRARYGKLPSATQAFAPIFVPILLICLGSVAVFPSKPLGEGVLFACLNFLGQPVI
                                                                                                                                                                                                                                                                                                                                                                                                    /translation="mTLVLILLALIAFIVLSTTRLKLHPFLALLAAALIAGFAYQVPT
AEIVKTVTGGFGSILGYIGIVIVLGTIIGVILERSGAAITMAESVIRLLGERFPTLTM
SIIGYLVSIPVFCDSGFVILNSLKNALAARMKISTIAMSVALATGLYATHTFVPPTPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="probable transporter"
/protein_id="AAG04440.1"
/db_xref="GI:9946965"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RYRLERIASISGLDLARLEHROQLLLGLQLLVPRRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="conserved hypothetical protein"
/protein_id="AAG04439.1"
/db_xref="GI:9946964"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="PA1050"
3088. .4200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="mtqSladmrreytrdglseanapSDpfSlfrQwfdDavkterlp
vepnamtlatvdadgyphCrilllkGldergftfftnyeSakGrQlaanpraamtffw
palerqvriegSvekvtpeeSDayyqvrplGSRlGawaSpQSrviadraelerllaDt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/trans1_table=11
/product=pyridoxine 5'-phosphate
/protein_ld="AAG04438.1"
/db_xref="GI:9946963"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PFGKDDGQTVAKQATEQKAEAEHVGSSHWWWPFGKDEGGRDVAAKAAEQKAEIAAAKK
EVAAAAEPKAANPWWWPFGASSASKASGKPALVQQKVTKEWLDAHEKALREAIAGSEF
TLERRDNALIVIAPADYSFNPKRHTMLMPITLNPLGKVAKMAQADPQSGILVLGHTDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/trans[==11
/product="aprobable outer membrane
/protein_id="AAG04437.1"
/db_xref="GI:9946962"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="PA1048"
1453. .2334
                                                                                                                                                                                                                                                                                VMATGAGAMTVSHANDSFFWVVTQFSRMTVSTAYRAQTLATLVQGIAGMLAVWLLSLV
                                                                                                                                                                                                                                                                                                  ALLVGLALACTLLKGOSKREEFHERVVEGIQSAAPILLITGAGGAFGAMLKITPLGDY
LGSTLSALGIGLFMPFVVAAALKTAQGSTTVALVTTSALVAPLLPQLGLDSEMGRVLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="PA1051"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="PA1050"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3088.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ERRFADQPPSCPEHWGGYRLLPQRIEFWQGRPSRLHDRLDYRRQDGGWLRERLAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="pdxH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="pdxH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EVLYTQRASLLSLAQGN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGSKAVNDKLSFERAQSVAAIFRLSGLKGDQLRLKGVGSDMPRADNASAAGRAQNRRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="PA1048"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     translation-"MKLLKTSTLLLCMTASGCSYFQTQDASSQPAKAPAEQASSHSWW/
                                                                                                                                                                                                                               .6904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oxidase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein'
```

```
/traislation="Milaliatepmgallpulaerggrtucaasagvapliglill gorgrypagothasyswlpeiginuslrldglofleflalicagrapliglill gorgrypagothasyswlpeiginuslrldglofleflalicagraplise gorgrypagothasyswlpeiginuslrldglofleflalicagraplise gorgrypagothasyswlpeiginuslrldglofleflalicagraplicagraplar generative gorgraplicagraplar generative gorgraplicagraplar grant gorgraplar grant gorgraph gorgraplar grant gorgraph gorgraplar gorgraph gorgr
                                                                           /Translation="MSHHIILPILPLEAGSLLLLPLAERWORGLS/LLAALALIPLS/LLIARASGDLS/YALGNWAAPFGIVLMLDRLAALMLLATAVLGSAALIYALRGEDRLGKHFHALFQFQLLGINGAFLTGDLFNLFVFFEILLIASYALLLHGGGAFFVRSGLHYVAALFATUVGSAFFLIAVGTLYGTGTLNMADMAQKIAMADAERAPLLAAAGILLLVVFALKAALLPLYFWLFRARYATSAAPVAALFAIMTKVGIYSILRVYTLVFGDAAGELLANLAVAALAAGILYVLLHLAATLGLGAIGALAARTLQGLLAYLVVVSAGTLLAGVALGSERALAASLYYLLHLAGVALGSERALAASLYYLLH
fgkvmllqsvapgsqalālwsvvlgsgīvalvālsragstlewrtghtvlgsaeldhg
                                                   STWIAGGLELLADLVARQRGDKAGDLVQGPALQNPRLLGGAFFIGATAVAGLPPLSGF
                                                                                                                                                                                                                                                                                                                                                                                /product="probable NADH dehydrogenase"
/protein_id="AAG04445.1"
/db_xref="GI:9946970"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="PA1055"
10907. 110-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="PA1056"
11242. .12741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MEALFAITLGLLTASGVYLLLRARTFPVVLGLTLISYAVNLFLF
AMGRLGGSVAVIGTPGEYGDPLPOALVLTAIVIGFAMTAFVVVLALRGLGDLGSDHVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="conserved hypothetical protein"
/protein_id="AA60444.1"
/db_xref="GI:9946969"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="PA1056"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYLGKLSLMPEPVAQEEAL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="PA1055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLIAGLTGLGSWLFGYPFLTSAFGHFELPLTGEIELATAMLFDLGVYLTVVGAALLIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="probable NADH dehydrogenase"
/protein_id="AAG04443.1"
/db_xref="GI:9949968"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="conserved hypothetical protein"
/protein_id="AAG04442.1"
/db_xref="G1:9946967"
/translation="MRKSALIVASFTAMALALGGCQSSLTGDTYSREEARTVQTVRMGTQALREVKIEGTKTPSIGSIAGAGYGGVAGSAVGGKKGSYVAAIIQAVAGGLLGAATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="PA1054"
8106. .10907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GEGTVDAVLAATAGERRECRVEGPLGEPTLAHWGWLDDATAVIEMASASGLHLVPRDR
RDATRSSSRGTGELIRAALDAGARKIILGLGGSATNDAGAGLLGALGYRFLAADGEEL
APGGAALAGLHSLDLGGLDPRLYDVAVEVAADVDNPLCGPRGASAVPGPOKGASAEQU
AQLDAALAHFAKVVAATLGEDFSRVPGVGAAGGLGFAARAFLRARFRRGIELVAELAG
LADALVGADLVLTGEGKLDAQSLHGKTPVGVARIARQAGVPVVALAGSLGDGYQRLHD
AGIDAAFSLAPGPISLEQACAGAAAELEARAEQIARLWRLAQASREG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="PA1054"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="PA1053"
7313. .7777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="PA1053"
```

CDS

CDS

CDS

gene CDS

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
ATF7K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 75
                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                        Direct Submission

AL Submitted (09-MAR-2000) MIPS, at the Max-Planck-Institut fuer Biochemie, Am Klopferspitz 18a, D-82152 Martinsried, FRG, E-mail: Coordinator: Mike Bevan, Molecular Genetics Department, Cambridge E-mail: michael.bevan@bbsrc.ac.uk
On Aug 18, 1999 this sequence version replaced gi:389268

Information on performance of analysis and a more detailed and 5 can be viewed at: http://www.mips.biochem.mpg.de/proj/thai/.

Location/Qualifiers

1. 106702

urce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7614 CCGAAGAAGGCCTG 7627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7494 TCGGTTCCATCGCCGGTGCCGGCGTCGGCGGTGTCGCCGGCAGCGCGGTGGGCGGCGGCA 7553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146 CTGGTCGTGTGGATGGCCATCGGCGGTGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86 TTGGCGCGGCCACCGGTGCGGGTTGTGGGGGGGTTGTCGGTAAAGGCT 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCAL Similarity
les 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCAGCTACGTCGCGGCCATCATCGGCGCGGCGTCGCTGGGGGGCTGCTGCGCGCGGGCTA 7613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGGTCAGAGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           EU Arabidopsis sequencing, project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bevan,M., Robben,J., Grymonprez,B.,
Mewes,H.W., Lemcke,K. and Mayer,K.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 92830 to 92989)
Bevan,M., Volckaert,G., Grymonprez,B., Voet,M., Rob.
Bancroft,I., Mewes,H.W., Lemcke,K. and Mayer,K.F.X.
3 (bases 1 to 1000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.

1 (bases 1570 to 106702)
Bevan, M., Wedler, H., Wambutt, R., Bancroft, I., Mewes, H.W., Lemcke, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       thale cress.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL033545.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana DNA chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        project).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATF7K2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases
                                             /note="strong similarity to NHP2/RS6 FAMILY PROTEIN, sapiens, PID:g4826860 Contains Ribosomal protein L7Ae signature AA73-90
                                           contains EST gb:F13981"
                                                                                                        complement(join(<3. .98,594./gene="AT4g22380"
/product="Ribosomal protein L7Ae-like (fragment)"
                                                                                                                                    /note="basepairs 1-15769 are not integral part of BAC clone F7K2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                      Organism="Arabidopsis thaliana"
/variety="Columbia"
/db_xref="taxon:3702"
/chromosome="4"
                                                                                                                                                                               1. .15769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 to 106702)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to 16021)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:5738368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106702 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39.6;
No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Volckaert,G., Bancroft,I.,
.X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA linear PLN 10-;
e 4, BAC clone F7K2 (ESSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 13946;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robben, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLN 10-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                              Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

	CDS	exon	gene	gene								CDS	gene		exon								CDS		exon	gene	gene	e ACII	intron	gene	gene	(1) (1)		
/iote/335/1429/313///328034)) /gene-Mar4922410" /note-"similarity to snRNP assembly factor like protein,		\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	complement()oin(61126297,66756812,69087075, 71687353,74297513,77758034))		[O ID	GSTLGWLVMSESLDLNPRKTHQTFLYNPFISELQQLPELTLDSPYPTGVLRYGVLTGN PSDNNTYACLITDYLHEIGNRRDTYTLLIYYVAKTSGRWEQNWSVASMLVVGIFDTWY	<pre>/translation="mlsshlsqicfscrdplcnlpadlirkctdlmdlnfaegqrlrt</pre>	/protein_id="CAB52814.1" /db_xref="GI:5738371"	<pre>/codon_start=1 /product="putative protein"</pre>	ana 17595*	<pre>/gene="AT4g22400" /note="similarity to various predicted proteins,</pre>	/9ene="M14922400" 47285711	4728 5711	A.	LL" 47285711	WFDLESQSLTTAGIECDSSFTADILVSSLVLGCKGDPTQAQRSKDQKMMPKSTKRWYA	LKEGKKKFPCPVEVKVFSLKKNSWKRVCLMFEFQILWISYYYHLLPRRGYGVVVNNHL HWILPRRGGVLAFNAIKYDLASDDIGVLSFPQELYIEDNYDIGVLDGCVCLMCYDEY CHYNLAFIA FYVENGGEMY DEUTSTDESTFONT FOGTDAGTTIFFTNINN NIT	NSPVDLAIFNPSTRKIHRLPIEPIDFPERDITREYVFYGLGYDSVGDDFKVVRIVQCK	/translation="MAECFFEDLINEMFLRLRATTLVKCRVLSKPCFSLIDSPEFVSSH /translation="MAECFFEDLINEMFLRLRATTLVKCRVLSKPCFSLIDSPEFVSSH LRRRLETGEHLMILLRGPRLLRTVELDSPENVSDIPHPLOAGGFTEVFGSFNCVIGLC	/protein_id="CAB52813.1" /db xref="01:5788370"	/codon_start=1 /product="putative protein"	/note="similarity to various predicted proteins, Arabidopsis thaliana"	complement(17892973)		/gene="AT4g22390" complement(17892973)	/gene="A19922390" complement(17892973)	710111051-7 1789. 12973	Comparement (1994. 1921) /gene="AT4g22380" /comparement (1994. 1994)	complement(99593)	complement(join(398,594821)) /gene="AT4022380"	3821 /gene# ATAG22380*	Comp.remetr()	SVTSNE"	/protein_id="CAB52812.1" /db_xref="cd:5738369" /translation="MTGEVVNPKAYPLADSQLSITIMDLVQQATNYKQLKKGANEATK TLNRGISEEYVWAADASPLEILLHLPLLAEDKNVPYVEVPSKQALGRACGVTRPVIAC
	•											-	-																					
. exon	intron						CDS	gene	gene	,	exon	LTR	misc_feature	LTR		exon	intron ,		exon		intron	exon		intron	exon		intron	excii	intron					
/number=1 complement(1370114033) /gene="AT4g22420"	complement(1361913700) /gence"AT4g22420"	KSDS Y Y Y Y LOF YNNH LLYLANNA I DIDIDEESONELA NSQAKKING YA KOEGNONI YNGERO EEVDDEEDDDDDASKGRGKHSRHVEVRRDC PYLDTVNRQVI I I DQFLMLRVPLATMRK RMRTGGRKAKAMEKYLKKVLKKGG"	/db_xref="GI:5738373" /translation="MARCPTDLINEMFIRERATTLKKCRVLSKPCFSLIDSPEKRVIE	<pre>/product="putative protein" /protein_id="CAB52816.1"</pre>	<pre>contains EST gb:T44427" /codon_start=1</pre>	<pre>/note="similarity to predicted protein, Arabidopsis thaliana</pre>	<pre>complement(join(1351313618,1370114033,1421614331)) /qene="AT4q22420"</pre>	1351314331 /qene="AT4q22420"	complement(join(1351313618,1370114033,1421614331)) /dene="AT4d22420"	/gene="AT4g22420" /number=1	/note="389bp LTR" complement(13513, .13618)	/note="LTK retrotransposon" 1323413624		8449	*	/number=5 complement(77758034)	complement(75147774) /gence"AT4922410"		complement(74297513) /gene="AT4022410"	0	/number=4 complement(7354, 7428)	complement(71687353) /gene="AT4g22410"	/gene_"AT4922410"	/number=3 - 7167)	complement(69087075) /qene="AT4q22410"	/gene="AT4g22410" /number=2	/number=2 complement(68136907)	CUMPLEMENT(00/30012) /gene="AT4922410"	complement(62986674)	I PQVALEDLLKKEDGETVTEVVRPKLARMRYRVIKSPRYLMEHMVREKKNNEFKEKNP TLGESV"	FGELTRK I WHARNEK GOVS PHEEFLQAN WKASKKRFRI GOQQS DEVEEM SWLLNTLHINDL	/ LIGHBYLGCHOR="MYERYQLUE HERKCSYSJENKINY FALTYCKIY FUKKOKKOKKARI THSLEAGHHYVINLLTEKYYCLPDSYEINDPSLDDIRHVINPRFSRAQVINELDKURQW SRALDGSDYLDGWYLLNIOKTEFVNYTIOSLMRYTFLANFEHTDENVOHCKSDIVHC	/db_xref="GI:5738372"	Homo sapiens, PID:g5730025" /codon_start=1 /product="putative protein" /protein_id="CAB52815.1"

/number=2

```
FEATURES
Source
                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                         CDS
                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
ATCHRIV57
LOCUS
                                                                                                                                  exon
                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33426 GTTGGAGGTGTCTCCGGTGGTGTGTTTGGAGGAGTTCCTGGTGGTGTGTTTGGAAGTGTC 33485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 TCTGGTCGTGTCTCGATGGCCATCGGCGGTGCGGTTCTGGCCGGTCTGATTGG 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85
                                                                                                                                                                                                    Information on performance of analysis and a more detailed annotation of this entry and other sequences of chromosomes 3, 4 and 5 can be viewed at: http://www.mips.biochem.mpg.de/proj/thal/this fragment has an overlap with ATCHRIV58 at the 3 overlap with ATCHRIV58 at the 3 end.
                                                                                                                                                                                                                                                                          Submitted (10-MAR-2000) MIPS, at the Max-Planck-Institut fuer Biochemie, Am Klopferspitz 18a, D-82152 Maxtinsried, FRG, E-mail: lemcke@mips.biochem.mpg.de,mayer@nips.biochem.mpg.de Project Coordinator: Mike Bevan, Molecular Genetics Department, Cambridge Laboratory, John Innes Centre, Colney Lane, NR4 7UJ Norwich, UK, --mail: michael.bevan@bbsrc.ac.uk
                                                                                                                                                                                                                                                                                                                                                                            EU Arabidopsis sequencing, project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTCGTCGTGTGTTTGGAGGAGTTCCCCGGTGGTGTGTTTGGAGGTGTTTCTGG 33538
                                                                                                                                                                                                                                                                                                                                                                                                                               Robben, J., G. Mayer, K.F.X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hilbert,H., Braun,M., Holzer,E., Brandt,A., Mewes,H.W., Lemcke,K. and Mayer,K.F.X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGGCGCGGCCACCGGTGCGGGTGTGGGGGGGTGTTGCCGGCCAGCTGTTCGGTAAAGGC 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wedler,H., Wambutt,R., Mewes,H.W., Lemcke,K. and Mayer,K.F.X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis,
Leadler H 155510)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 wemcke, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCHRIV57
Arabidopsis thaliana DNA chromosome 4, contig fragment No. 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           thale cress.
                                                                                                                                                                                                                                                                                                                                                                                                            (Dases 48809 to 64829)
bben,J., Grymonprez,B., Volckaert,G., Mewes,H.W., Lemcke,K. and
                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 199577)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 143670 to 199577)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 141638 to 141797)
     complement(join(6674. .6882,7268. .7339,7507. .7575,
7667. .7775,7863. .7978,8361. .8454,8588. .8777,8909.
/gene="AN4g22260"
                                           Complement(join(6674. .6882,7268. .7339,7507. .7575,7667. .775,7863. .7978,8361. .8454,8588. .8777,8909.
                                                                                                                    /gene="AT4g22260"
complement(6674.
                                                                                                                                                   /Organism="Arabidopsis thaliana"
/Variety="Columbia"
/db_xref="taxon:3702"
/Chromosome="4"
6674. 9057
                                                                                                    /gene="AT4g22260"
/number=1
                                                                                                   /number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Mayer, K.F.X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:7269071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Grymonprez,B., Voet,M., Robben,J., Mewes,H.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 39.4;
Pred. No. 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Duesterhoeft,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 106702;
            .9057))
                                                 .9057))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                  CDS
                                                                                                                                          gene
                                                                                                                                                                               exon
                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                             exon
                                                                                                                                                                                                                                                       intron
                                                                                                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                                                                                                                        intron
                                                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                                                                                                                                                                                               exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intron
```

MAAAII IILOD	/note="similarity to alternative oxidase, Mangifera indica, PIR2:S45035 contains EST 9b:T42793, AI994896.1, AI997645.1, R30022, AA395166 putative protein / Codon_start=1 / Product="Putative protein" / Protein_id="CAB79181.1" / De_xxef="GI:7269772".1"
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                  exon
                                                                                                                                                                 exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ERNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          intron
                                                                                                                 intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           intron
                                complement(13379.
/gene="AT4g22280"
/number=3
                                                                                                                                                                                                                                                                              ISEDDIGFVPLEIFTCKTLVELKLARGFYAMVPDYVSLPSLKTLFLSSIWFCNRDCCP
LGRLLSACPVLEELTIIGGCWQHIEFCRTVSSSTLKKLTITSSFHYEYWGITIDTPSL
AYLEYSDLVPRHFPFVNLESLVEAKLALDLCSDSNPTNLIKGLRNVEVLELSSGYTSQ
                                                                                                                                                                                                                                                                                                                             /translation="MEKDVMTDETCIVGRNPATIVNVNGLNISHQCMISLKLKCYIIF
FGVVDAGDLLFRLITPERFIRIWQRMDRINEATSTSVLSMRWRYLFAFRPNLCLDDQE
VGGGDSFIDFVDRVLVVTGNFPIRRISIKCRMSIDTGHVTRWMVDVLEHGVSYLDIDI
                                                                                                                                                                                                                                                                                                                                                                         /product="putative protein"
/protein_id="CAB79183.1"
/db_xref="GI:7269074"
                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similarity to hypothetical protein, Arabidopsis thaliana, PATCHX:G2392763 contains EST gb:AI998861.1, AI993240.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(join(12761. .13015,13081.
14209. .14314,14995. .15111))
/gene="AT4922280"
complement(join(12761. .13015,13081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene-"AT4g22280"
complement(12761.
                                                                                               /gene="AT4g22280"
                                                                                                                                                                                            complement(13016. .13080)
/gene="AT4g22280"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="AT4g22280"
/number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LQTLRLDDFARCFASEITDVRSALGEHQKIRRNLRIVSHRFRRFILLSLILVTATQFM
ALLTTTRASVAVNIYEVGELALCSLSLVTGVFICLRSATKITHKAQSVTSLAAKNNVC
                                                                                                                                                                 complement(13081.
                                                                                                                                                                                                                              LLMVPRSSNCNIKLKFC"
                                                                                                                                                                                                                                               REYGLSCPVKVLEITEYGGKYEELEQMEHFLKKLPCLELVKVRASAINDKEKSRITKE
                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="AT4g22280"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="AT4g22270"
/number=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="AT4g22270"
/number=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATVDSFDHLDGETPTGSIIESQVSLRGNAIETSDDEEGEGDDDLDNTKIHPIYANTIS
                                                                                                                                              /gene="AT4g22280"
                                                                                                                                                                                                                                                                ILYDFREAIPVLSKLFRLSIKSNSRHYYIWNLLPILLEKSPKLETLVIKGPLSADRYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14209.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11780.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="tRNA-Tyr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Tyr-tRNA_(GTA)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="AT4g22270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QKRQALVTYLENNKAGITVYGFLVDRSWLNTIFGIELALLLWLLNKTIGILA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           number-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lement(join(12761. .13015,13081.
9. .14314,14995. .15111))
   8.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .12393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .11867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .11779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .10516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12174
   Score 39.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .13015)
                                                                                                                                                               .13227)
                                                                  .14157)
                                                                                                                 .13378)
   В
   œ
   Length 199577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .13227,13379.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .13227,13379.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .14157,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
 Ş
                                 В
                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82294
                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
   112 GGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGC 171
```

```
RESULT 15
DMU60844/c
                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 67; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82234 GTTGGAGGTGTCTCCCGGTGTGTGTTTTGGAGGAGTTCCTGGTGGTGTGTTTGGAAGTGTC 82293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145 TCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGG 197
927 GTTGATGATGTCCACGAACTCGGGCTTCAGGGAGGCGCCTCCGACCAGGAAGCCATCGAT 868
                                     52 GTGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGGCCACCGGTGCGGTTGTG 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85 GTTGGCGCGCCACCGGTGCGGTTGTGGGGCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 1070)
Hasson, E., Wang, I.W., Zeng, L.W.,
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hasson, E., Wang, I.N., Zeng, L.W., Kreitman, M. and Eanes, Nucleotide variation in the triosephosphate isomerase of Drosophila melanogaster and Drosophila simulans Biol. Evol. 15 (6), 756-769 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (14-JUN-1996) Ecology & Evolution, Standard York at Stony Brook, Stony Brook, NY 11794,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Ins. Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 1070)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U60844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster strain (Tpi) gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98277691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U60844.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fruit fly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DMU60844
                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                              Conservative
                                                                                                                                                                          IYLMYARNLLPCELGLAGQNAYKVAKGAFTGEISPAMLKDIGADWVILGHSERRAIFG
ESDALLAEKAEHALAEGLKVIACIGETLEEREAGKTNEVVARQWCAYAQKIKDWKNVV
VAYEPVWAIGTGKTATPDQAQEVHAFLRQWLSDNISKEVSASLRIQYGGSVTAANAKE
LAKKPDIDGFLYGGASLKPEFVDIINARQ"

3 345 c 301 g 186 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="individual isolate USA); Tpi slow allele" join(<134. .670,733. .>939
                                                                                                                                                                                                                                                                           /product="triose phosphate isomerase"
/protein_id="AAC39049.1"
/db_xref="GI:318430"
/translation="MSRKFCVGGNWKMNGDQKSIAEIAKTLSSAALDPNTEVVIGCPA
                                                                                                                                                                                                                                                                                                                                                                           join(134. .670,733.
/gene="Tpi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Tpi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/strain="DPP-46"
/db_xref="taxon:7227"
/chromosome="3R"
                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Tpi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="triose phosphate isomerase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /map-"99 E"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:3184329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  melanogaster
                                                                                             8.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59.3%;
                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 32;
Q; Mismatches
                                                                                             Score 39; DB
Pred. No. 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stony
                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DPF-46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kreitman, M. and Eanes, W.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                              145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       triose phosphate isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46;
                                                                                                                Length 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         strain
                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     State University of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DPF-46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INV 04-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Tpi) locus
                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                              0
```

Searc Job t	DЪ	Qy	Dβ	Qy	Db	Qy	DЬ
ch con	687	292	747	232	807	172	867
Search completed: October 27, 2002, 17:46:41 Job time : 1387.41 secs	687 TOTGCGGGCGACCTTACCTGATCGGGTGTGG 657	292 AATCCGGACACCGGTAACAGCTACTTCTTCTCC	747 GTGAACCTCTTGAGCCTGCAATTGGGAAATGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGGAAATTGGAAATTGGGAAATTGGGAAATTGGAAATTGGGAAATTGGGAAATTGGGAAATTGGAAATTGGAAATTGGGAAATTGGAAATTGGGAAATTGGAAATTGGGAAATTGGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGGAAATTGAAATTGAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAATTGAAAATTGAAAATTGA	AAAATCAAACTGAACCAGTCTCTCTCCAAAAATCAAACTGAACGCAGGAAGGC 748	807 GCGCAGGCTGGACACCTCCTTGCAGATCTCTCTTTTTTTT	172 GGTGCGGTTCTGGGCTCTCTTTTCTTTTTCTTTTTTTTT	GTCGGCCTTCTTGGCCAGCTCCTTAGCCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTCTTTGCCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCTCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCCTTTGCCTCTTTGCCCTTTGCCCTTTGCCCTTTGCCTCTTTGCCCTTTGCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTTGCCCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTGCCTTTTGCCCTTTTGCCTTTTGCCTTTGCCTTTTGCCTTTTGCCTCTTTGCCTTTTGCCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCTTTTGCCTTTTGCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCCTTTTGCTTTTGCCTTTTGCCTTTTGCCTTTTGCTTTTGCCTTTTTGCCTTTTTGCCTCTTTTGCCTTTTTT

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Listing first 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic -
                                               O
                                                                                                                     a
                                                                                                                                          O
                                                                                                                                                                              ဂ
                          O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being pu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB seq
                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                            18
                                                                                                                                                                                                                                                                           derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-677-374-3
483
1 atgcgtggttgcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        October 27, 2002, 20:15:49; Search time 967.668 Seconds (without alignments) 6736.842 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OLIGO_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13736207 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                     em_estov:*
em_estpl:*
em_estro:*
em_htc:*
                                                                                                                                                                                                                                                                                                                       gb_gss:*
em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                           gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                 gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_estba:*
                                                                                                                                                                                                                  Length DB
  744
2405
372
386
387
387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 (c) 1993 - 2002 Compus
                          10
10
10
10
                                                                                                          9
9
                                                                                                                                             10
12
10
2 AQ518147

2 FR0011976

2 FR0011976

0 T51729

0 RM381932

AW658421

1 AIG37152

1 AIG37152

1 BH335231

1 BH335033

10 BM350333

10 BM350333

10 BM350333

10 BM350333

11 BH395820

12 BH395820

13 AX480423

14 AX480423

16 BF656950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6748477542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chosen
                                                                                                                                                                                                                  Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          summaries
                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27472414
           AQ518147 HS_5090_A
BI186311 UNL-P-FN-
AL00323 F.rubri P-
FN-63598 AV763598
AV763598 AV763598
BM381932 MEST542-A
AW658421 94440 MAR
AI637152 603001008
BM335231 MEST147-F
BH381604 AG-ND-132
BM35033 MEST264-C
BI764273 603045965
BG715056 602673281
BH395820 AG-ND-119
AW145423 9820h03.y
AZ480429 1M0301N22
                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                     printed,
  0V2
                                                                                                                                                                                                                           JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
AQ518147
LOCUS
DEFINITION
                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဂ ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     000000
                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                           401 Queen Anne Avenue North, Seattle, WA 98109, USA
Tel: (206) 616-3618
Fax: (206) 616-3618
Fax: (206) 616-3618
Fax: (206) 616-3618

Email: jwallace@t.washington.edu
Clones are derived from the human BAC library RPCI-11. For BAC
Library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://bacpac.med.buffalo.edu/ordering_bac.htm)
or from Resear h Genetics (info@resgen.com). BAC end Web Server:
http://www.htsc.washington.edu
Plate: 666 row: K column: 15
Seq primer: T7
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                             AQ518147 516 bp DNA linear GSS 05-MAY-HS_5090_Al_F08_T7A RPCI-11 Human Male BAC Library Homo sapiens genomic clone Plate=666 Col=15 Row=K, DNA sequence.

AQ518147 AQ518147.1 GI:4743329
                                                                                                                                                                                                  Contact: Mahairas GG, Wallace JC,
High Throughput Sequencing Center
University of Washington
                                                                                                                                                                                                                                                 Sequence-tagged connectors: A sequence approach to mapping and scanning the human genome Proc. Natl. Acad. Sci. U. S. A. 96 (17), 9739-9744 (1999)
                                                                                                                                                                                                                                                                                              Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T., Keller,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D.
                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 516)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99380589
                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                        numan
             quality sequence stop: 516
Location/Qualifiers
1. .516
 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         394
405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
12
12
12
12
12
12
10
10
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE405086
A1628427
BH371300
AA884310
AA978208
B1683491
B1378459
BH393470
BH382024
BH394407
T67705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BI479759
AI167944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AI953147
AI635553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BB748581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R98050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                            Hood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AQ408806 HS_5115_A
BE552264 Py05c03.x
B76017 RPC111_13E1
A1953147 wq50h02.x
A163553 t595e09.x
R98050 yr30d06.s1
B148581 BB748581
B149759 WHE3451_G
A1167944 0009b08.x
B1326875 AR070H081
BE405086 WHE1215_E
A1628427 ty76d03.x
B1371300 AG-ND-131
AA884310 am15c05.s
B43713217 RPC1-24-1
AQ978208 RPC1-23-3
B168491 464898 MA
BH378459 AG-ND-145
BH382024 AG-ND-145
BH382024 AG-ND-140
BG712909 pg11n.pk0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AV596360 AV596360
AW950089 EST362279
BH372181 AG-ND-167
```

GSS 05-MAY-1999

and

DЬ δÃ

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
BI186311/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 191 GCCTGCAGGGCAGCTCTCTG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11 GCCTGCAGGGCAGCTCTCTG 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Pomp, D
Department of Animal Science
University of Nebraska, Lincoln
Lincoln, NE 68583-0908, USA
Tel: 402 472 6416
Fax: 402 472 6362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: dpomp@unl.edu oligo-dT track not found, Not I si is likely internal to the message.
                                                                                                                                                                                                                                                                                                                                                                                                                                    POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caetano, A.R., Johnson, R.K. and Pomp, D. Generation and sequence characterization of a normalized cDNA library from swine ovarian follicles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
1 (bases 1 to 823)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pig.
Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BI186311 823 bp mRNA linear EST JUNL-P-FN-cf-b-07-0-UNL.s2 UNL-P-FN Sus Scrofa cDNA clone UNL-P-FN Sus Scrofa cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI186311.1 GI:14660720
                     151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                     ۵
                                                      /note="Westor: pT?TBD-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: Eco RI; The UNL-PFN ovarian follicles, ranging between 2.0 to 10.0 mm in of the pig estrous cycle. This library was derived from the library UNL-PF2. The tag is a string of 5-6 nucleotides present between the Not I site and the coligo-dr track. The library was constructed and the coligo-dr track. The library was constructed as described between the Not I site and the coligo-dr track. The library was constructed as described between the Not I site and the coligo-dr track. The library was constructed as described between the Not I site and the coligo-dr track.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122 a
       TAG_SEQ=None found"
272 c 231 g
                                                    by Bonaldo,
, 1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                          /db_xref="taxon:9823"
/clone="UNL-P-FN-cf-b-07-0-UNL"
/clone_lib="UNL-P-FN"
                                                                                                                                                                                                                                                                                                                                /organism="Sus scrofa"
/strain="University of Nebraska, Lincoln Swine Selection
Lines"
                                                                                                                                                                                                                                /lab_host="DH10B_(Life_Technologies)"
                                                                                                                                                                                                                                                                /dev_stage="ADULT"
                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pBACe3.6; Site_1: EcoRI; Site_2: EcoRI; Male blood DNA was isolated from one randomity chosen donor and partially digested with a combination of EcoRI and EcoRI methylase. Size selected DNA was cloped into the pBACe3.6 vector at EcoRI sites"

156 c 129 g 104 t 5 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /Clone_lib="RPCI-11 Human Male BAC Library"
/Sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9606"
/clone="Plate=666 Col=15 Row=K"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Not I site shown in beginning of sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
     167 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                            s constructed as described Genome Research 6: 791-806
   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 10-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
```

ORIGIN

```
REFERENCE
AUTHORS
                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                     RESULT 4
T51729
                                                                                                                                                                                                                                                                    DEFINITION
                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 3
FR0011976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                  119 CAGGGCAGCTCTCTGATCA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                  16 CAGGGCAGCTCTCTGATCA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                730
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (Dases 1 to 348)
Hillier, L., Lennon, G., Becker, M., Bonaldo, M.F., Chiapelli, B., Chissoe, S., Dietrich, N., DuBuque, T., Favello, A., Gish, W., Hawkins, M., Hultman, M., Kucaba, T., Lacy, M., Le, N., Mardis, E., Moore Schellenberg, K., Soares, M.B., Tan, F., Fifkin, L., Rohlfing, T., Chierwood, K., Wohldmann, P., Waterston, R., Wilson, R. and Marra, M. Generation and analysis of 280,000 human expressed sequence tags
                                                                                                                                                                                                                           T51729
348 bp mRNA linear EST 06-FEB-
yb28d01.r1 Stratagene fetal spleen (#937205) Homo sapiens cDNA
clone IMAGE:72481 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                              numan
                                                                                                                                                                                                                      T51729.1
                                                                                                                                                                                                                                                                                                                                                                                                         ch 3.9%, S
1 Similarity 100.0%,
19; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGCCTGCAGGGCAGCTCT 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGCCTGCAGGGCAGCTCT 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             One pass dye-terminator sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (09-SEP-1997) MRC Human Genome Mapping Project Resource Centre Hinxton, Cambridge, CB10 ISB. Email: biohelp@hgmp.mrc.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIMER: M13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tetraodontidae, Takifugu.

1 (bases 1 to 190)
Elgar,G., Clark,M., Smith,S., Meek,S.,
Williams,G. and Brenner,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Takifugu rubripes.
Takifugu rubripes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F.rubripes GSS sequence, clos
AL003232
AL003232.1 GI:2448802
GSS; genome survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FR0011976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56
                                                                                                                                                                                                                   GI:653589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /Organism="Takifugu rubripes"
/db_xref="taxon:31033"
/clone_lib="cosmid 072L05"
/clone="072L05aB5"
/clone="072L05aB5"
1 38 c 40 g 56 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.18;
100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                  Score 19, Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 20; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         190 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                 DB
36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       072L05aE5,
                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of cosmid cloned genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
. 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Warner,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear GSS 18-SEP-199
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Umrania,y.,
                                                                                                                                                                                                                                                           EST 06-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS 18-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

ì

```
RESULT 5
AV763598/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                   Gu,J., Zhao,M., Huang,Q., Xu,X., Li,Y., Peng,Y., Song, Gu,Y., Li,N., Qian,B., Liu,F., Qu,J., Gao,X., Cheng,Z., L., Xu,S., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong Yang,Y., Gao,G., Zhang,Q., Chen,S., Han,Z. and Chen,Z. Homo sapiens cDNA MDS clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              High qality sequence stops: 262 Source: IMAGE Consortium, LLNL This clone is available royalty-free through LLNL; contact the IMAGE Consortium (info@image.llnl.gov) for further information. Insert Length: 502 Std Error: 0.00
                                                                                                                                                                                                            Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park,
201203, P. R. China
Tel: 86-21-50801919(ex.45)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AV763598 MDS Homo sapiens cDNA clone MDSAOD07 5', mRNA sequence. AV763598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
Insert Size: 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: wilson on Washington University School of Medicine
Mashington University School of Medicine
M444 Forest Park Parkway, Box 8501, St. Louis, MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Res. 6 (9),
97044478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AV763598.1 GI:10921446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 262 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 459)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           primer: Ml3RP1
                                                                                    l: hanzg@chgc.sh.cn
clone is available at CHGC
Location/Qualifiers
                                                                                                                                                                                      86-21-50801922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /lab_host="SOLR cells (kanamycin resistant)"
/note="Organ: spleen; Vector: pBluescript SK-; Site_1:
/note="Organ: spleen; Vector: pBluescript SK-; Site_1:
/note="Organ: spleen: Vector: pBluescript SK-; Site_1:
/note="Organ: spleen: pBluescript SK-; Site_1: Note: DBluescript State: Note: Sequence: 5' GAATTCGGCACGAG
/note="Organ: spleen: sple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9606"
/clone="IMAGE:72481"
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="fetal"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="Stratagene fetal spleen (#937205)"
/tissue_type="fetal spleen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="GDB:494146"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              807-828 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
39;
                                                                                                                       Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cheng, Z., Xu, Z., Ze
S., Zhong, M., Lu, G.,
                                                                                                                                                                                                                                                                           Pudong, Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Song, H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xiao,H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zeng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
BM381932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                               source
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTTCTGGGCGGTCTGATT 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTTCTGGGCGGTCTGATT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Individual basecall and confidence value were assigned using the phred software(http://www.phrap.org/). Overall sequence quality assessment and vector trimming was conducted using the Lucy software (version 1.16s, http://www.tlgr.org/softlab/). Lucy parameters were set to ensure an overall trimmed quality of 97.5% or better without any vector fragments in the chosen high quality region of each sequence. Low-quality bases between the poly-T and the high-quality region were replaced with N's to serve as spacers using a Perl program (est_process.pl), written by Dr. Hui-Hsien
                                                                                                                                                                                                                                                                                                                                                              FORWARD: primer T7-1 (AA TAC GAC TCA CTA TAG)
BACKWARD: primer Sp6 (ATT TAG GTG ACA CTA TAG)
Seq primer: universal (GTA AAA CGA CGG CCA GT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wen,T.J., Qiu,F., Guo,L., Ashlock,D.A and Schnable,P.S. Expressed Sequence Tags from B73 Maize: various stages including seedlings treated with a variety of hormones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEST542-A12.univ ISUM6 Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                   PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Patrick S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clade; Panicoideae; Andropogoneae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM381932.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: schnable@iastate.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fax: 515-294-2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Iowa State University
                                                                                                                                                                                                                                                                                                                                            POLYA=Yes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Agronomy, Io 515-294-0975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
/note="Vector: pTriplEx2; Site_1: sfiIA; Site_2: sfiIB" 146 c 144 g 22 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="Bone marrow"
/cell_type="CD34+ hematopoietic stem/progenitor cell"
/lab_host="BM25.8"
                                                                                                                                   /tissue_type="mixed"
/lab_host="DH10B"
                                                                                                                                                                                   /clone="MEST542-A12"
/clone_lib="ISUM6"
                                                                                                                                                                                                                             /cultivar="B73"
/db_xref="taxon:4577"
                                                                                                                                                                                                                                                                           /organism="Zea mays"
                                                                                                                                                                                                                                                                                                                  ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="MDS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Iowa State University, Ames,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schnable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     527 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA clone MEST542-A12 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IA 50011-1010, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 16-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167 TCGCCGCTGCGGTTCTGGG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGCCGGTGCGGTTCTGGG 383
Single pass sequencing. Bases called and alt_trimmed with phred
                                                                                                     Contact: Smith TPL USDA, ARS, US Meat Animal Research Center PO Box 166, Clay Center, NE 68933-0166, USA
                                                                                                                                                                                                Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
                                                                                                                                                                                                                                                                                              1 (bases 1 to 528)
Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casas, E., Wray, J.E., White, J., Cho, J., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Cho
Mammalia; Eutheria; Cet
Bovidae; Bovinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94440 MARC 1BOV Bos taurus
AW658421
AW658421.1 GI:7424247
                                                                           402 762 4366
402 762 4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               separate first-strand cDNA synthesis. Hence, these bar code tags can be used to identify the mRNA pool from which associated with specific tissue sources are: ACTGGC-Mixed mature tissues (17, 21, 38, 69, 77 DAG); CACAGC-Kernels (3, 5, 10, 15, 20, 25, 30, DAP); CACAGC-Kernels (3, 5, 10, 15, 20, 25, 30, DAP); CM, Sand 56 DAG); AGGTAC-Tumature ears (0.2-3.0 cm, 53, 54 DAG); TGAGCG-Husks (73 DAG); GACCAC-Silks; GAGGAG-etiolated seedlings; GTCAGC-Anaerobic treated seedlings; CTGAGC-Husks (73 DAG); GACCAC-Silks; GAGGAG-CYCLObexinide-treated callus; GTCACC-Anaerobic 1-treated seedlings; CGTCAC-NAA (a-Naphthalene acetic acid AAGACC-CACPC (1-aminocyclopropane-1-carboxylix acid seedlings; GTCACC-Anaerobic 1-treated seedlings; GCTGA-Brassinolide-treated seedlings; GTGAGC-AGPC (1-aminocyclopropane-1-carboxylix acid seedlings; GTGAGC-AGPC (1-aminocyclopropane-1-carboxylix acid seedlings; GTGAGC-AAB, (Abscisic acid)-treated seedlings; GCTGA-Brassinolide-treated seedlings; GCGGA-GA (Gibberellic acid)-treated seedlings; amounts of first-strand cDNA from each reaction were strand synthesis. After the addition of EcoRl adaptors, and 2.0 kb were directionally cloned into the EcoRl and Solated from the library was digested with NotI to remove purified and ligated at low concentration to promote resulting library was ligation products were precipitated and resulting library was 1.2 x 10x6. "The complexity of the policy was 1.2 x 10x6."
                                        smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     528 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 10; Length 527;
41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 25-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                             ORIGIN
                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
AI637152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                             95
```

COMMENT

0,

0;

Gaps

0

JOURNAL MEDLINE

TITLE

REFERENCE AUTHORS

SOURCE KEYWORDS VERSION

ORGANISM

Bos taurus

RESULT 7 AW658421/c DEFINITION ACCESSION

Дb Qy

Matches

BASE COUNT ORIGIN

94

```
Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          211 CAGAGCATGGACCAGCAGG 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67 CAGAGCATGGACCAGCAGG
               l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                      Email: walbot@stanford.edu
Plate: 603001 row: D_column:
                                                                                                                                                                                                                                                                                                                                                            855 California Ave,
Tel: 650 723 2227
Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zea mays.
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                               Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                          Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Maize ESTs from various cDNA libraries sequenced at Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
Clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Walbot, v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AI637152.1 GI:4688482
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zea mays cDNA, mRNA sequence.
AI637152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A1637152 536 bp mRNA linear EST 26-APR-1999 603001D08.x1 603 - streased root cDNA library from Wang/Bohnert lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT
BACKWARD: GTTTTCCCAGTCACGACG
Plate: 62 row: P column: 3
Seq primer: ATTTAGGTGACACTATAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              v0.980904.e. Vector identified by cross_match with the -minscore 18 and -minmatch 12 options.
         Conservative
                                                                                     /tissue_type="seedling"
/tissue_type="seedling"
/dev_stage="salt stress"
/lab_host="E. coli XL Gold"
/note="Organ: root; Vector: pl
Seedling stressed root cDNA 1.
a 150 c 195 g 94 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                               Wang/Bohnert lab" stressed root cDNA library from
                                                                                                                                                                                                                   /db_xref="taxon:4577"
/clone_lib="603 - str
                                                                                                                                                                                                                                                         /organism="Zea mays"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pCMV SPORT6; Site_1: XbaI; Site_2: XhoI; Library made from pooled tissue from lymph node, ovary, fat, hypothalamus, and pituitary."

164 c 150 g 117 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone_lib="MARC 1BOV"
 100.08; 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                  Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                  Palo Alto, CA 94304, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 19;
Pred. No.
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                          80
                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 9;
41;
                                                                               pBluescriptII SK(+) XR;
library from Wang/Bohnert lab*
2 others
                                  Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
RESULT 9
BM335231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGGCGGTGCGGTTCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (<a href="http://depts.washington.edu/ventures/collabtr/direct/index.htm>#b">http://depts.washington.edu/ventures/collabtr/direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm>#b">http://direct/index.htm<#b">http://direct/index.htm>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">http://direct/index.htm</hd>#b">ht
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (2001)
Contact: Patrick S. Schnable
Schnable Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: primer T7-1 (AA TAC GAC TCA CTA TAG)
BACKWARD: primer T3 (ATT AAC CCT CAC TAA AG)
Seq primer: primer T3 (ATT AAC CCT CAC TAA AG).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 515-294-0975
Fax: 515-294-2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wen,T.J., Qiu,F., Guo,L., Ashlock,D.A and Schnable,P.S. Expressed Sequence Tags from B73 Maize: various stages and tissues including seedlings treated with a variety of hormones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence.
BM335231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM335231 630 bp mRNA linear EST 16-JAN-2002 MEST147-F07.T3 ISUM5-RN Zea mays cDNA clone MEST147-F07 3', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            вм335231.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phred software,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: schnable@iastate.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Individual basecall and confidence value were assigned using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Agronomy, Iowa State University, Ames, IA 50011-1010,
                                                         /note-"vector: pT7T3PAC; Site_1: EcoRI: Site_2: NotI;
/fissues: Germinated seed and seedlings (1, 2, 8, 11 DAG),
Mixed mature tissures (17, 21, 38, 69, 77 DAG), Kernels
(3, 5, 10, 15, 20, 25, 30, DAP), Adventious roots (65 DAG),
/fissel (3-39 cm, 53 and 56 DAG), Immature ear (0.2-3.0)
cm, 53, 56, 59 DAG), Husk (73 DAG), Silk, unpollinated
first ear, ear shank, etiolated seedlings, callus,
Cycloheximide-treated callus, Anaerobic treated seedlings,
NAA (a-Naphthalene acetic acid)-treated seedlings,
Kinetin-treated seedlings, ACPC
(1-aminocyclopropane-1-carboxylix acid)-treated seedlings,
Brassinolide-treated seedlings, ABA (Abscisic acid)
-treated seedlings, GA (Gibberellic acid)-treated
seedlings, JA (Jasmonic acid)-treated seedlings, acedlings, JA (Jasmonic acid)-treated seedlings, First-strand cDNA molecules were generated as follows: First-strand cDNA was prepared from oligo-dT selected mRNA by priming with a
NOTI Oligo-dT pilmer (5')
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:4577"
/clone="MEST147-F07"
/clone_lib="ISUM5-RN"
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="mixed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Zea mays"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to 630)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
BH381604
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                              δÃ
                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                               Matches
                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                  252 TCTGGAAAAAGTGAAAGCC 270
                                                                                                           l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSS
                                                                                                                                                                                                                                                                                                   168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      102
```

```
352 TCGGCGGTGCGGTTCTGGG 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167 TCGGCGGTGCGGTTCTGGG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: b)loftus@tigr.org

Email: b)loftus@tigr.org

This clone is from an A. gambiae BAC library (ND-TAM) provided by This clone is from an A. gambiae BAC library was generated from A. gambiae PEST strain (TiGR). The BAC library was generated from A. gambiae PEST strain DNA. All DNA was extracted from newly hatched first instar larvae to minimize the inclusion of DNA from microorganisms that inhabit the gut. The DNA is derived from mixed sexes of larvae. The BAC library was constructed at Texas A&M University BAC Center University, College Station, Texas 77843-2123, USA using a HindIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Brendan J Loftus
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Anopheles.

1 (bases 1 to 648)

Shetty,J., Malek,J., Koo,H., Collins,F., Gardner,M. and Loftus Direct Submission of BAC-end sequences from Anopheles gambiae
                                                                                                                                                                                                                                                                                                                                                                                              partial digest.
Seq primer: M13 For
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (2001)
Other_GSSs: AG-ND-132N21.TR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ынзыльный бан bp DNA linear GSS 10-DEC-2001 AG-ND-132N21.TF ND-TAM Anopheles gambiae genomic clone AG-ND-132N21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Anopheles gambiae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    African malaria mosquito.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BH381604.1 GI:17327746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 301 838 0208 Fax: 301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA sequence.
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               as a template for DNA PolI-catalyzed second strand synthesis. After the addition of EcoRI adaptors, the ds-cDNAs were digested with NotI and size-selected. The resulting molecules were directionally cloned into the EcoRI and NotI sites of the pT7T3PAC vector. The library then went through one round of normalization to CoT value of 5 based on the methods of Marcelo Bento Soares (Genome Research 6: 791-806, 1996)."
                                                                                                                            /Clone_lib="ND-TAM"
/note="Vector: pECBAC1; Site_1: HindIII"
132 c 114 g 234 t
                                                                                                                                                                                                                      /db_xref="taxon:7165"
/clone="AG-ND-132N21"
                                                                                                                                                                                                                                                                             /strain="PEST"
                                                                                                                                                                                                                                                                                                       /organism-"Anopheles gambiae"
                                                                                                                                                                                                                                                                                                                                          1. .648
                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.08; F1
                       3.9%;
0;
Score 19; DB 12; Length 648; Pred. No. 42; 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
. 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gardner, M. and Loftus, B.J.
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
0;
```

В

141 TCTGGAAAAAGTGAAAGCC 159

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
BM350333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (<a href="//depts.washington.edu/ventures/collabtr/direct/index.htm>#b overall sequence quality assessment and vector trimming were conducted using the Lucy software (<a href="http://www.tigr.org/softlab/">http://www.tigr.org/softlab/></a>). When the lucy software of control trimmed quality of parameters were set to ensure an overall trimmed quality of 97.5% or better without any vector fragments in the chosen high-quality region of each sequence. Low-quality bases between the poly-T and the high-quality region were replaced with N's to serve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: primer T7-1 (AA TAC GAC TCA CTA TAG)
BACKWARD: primer T3 (ATT AAC CCT CAC TAA AG)
Seq primer: primer T3 (ATT AAC CCT CAC TAA AG)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: schnable@iastate.edu
Individual basecall and confidence value were assigned using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wen,T.J., Qiu,F., Guo,L., Ashlock,D.A and Schnable,P.S. Expressed Sequence Tags from B73 Maize: various stages including seedlings treated with a variety of hormones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Schnable Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Patrick S. Schnable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BM350333 697 bp mRNA linear EST 16-JAN-2002
MEST264-C11.T3 ISUM5-RN Zea mays cDNA clone MEST264-C11 3', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВМ350333.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM350333
/note="Vector: pT7T3PAC; Site_1: EcoRI; Site_2: NotI; Tissues: Germinated seed and seedlings (1, 2, 8, 11 DAG), Mixed mature tissures (17, 21, 38, 69, 77 DAG), Kernels (3, 5, 10, 15, 20, 25, 30, DAP), Adventious roots (65 DAG), Tassel (3-39 cm, 53 and 56 DAG), Immature ear (0.2-3.0 first ear, ear shank, etiolated seedlings, callus, Cycloheximide-treated callus, Anaerobic treated seedlings, NAPA (a-Naphthalene acetic acid)-treated seedlings, Kinetin-treated seedlings, ACPC (1-aminocyclopropane-1-carboxylix acid)-treated seedlings, Napa (a-Naphthalene acetic acid)-treated seedlings, Napa (1-aminocyclopropane-1-carboxylix acid)-treated seedlings, Napa (1-aminocyclopropane-1-carboxylix acid)-treated seedlings, Napa (1-aminocyclopropane-1-carboxylix acid)-treated seedlings, Napa (1-aminocyclopropane-1-carboxylix acid)-treated seedlings,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 697)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  State University
Agronomy, Iowa State University, Ames, IA 50011-1010, USA 515-294-0975
515-294-2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="mixed"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="ISUM5-RN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="MEST264-C11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Zea mays"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAC TAA AG).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                         B
                                                              Q
                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
BI764273
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
            348 AAAGTGAAAGCCGGCCAGG 366
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167 TCGGCGGTGCGGTTCTGGG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370 TCGGCGGTGCGGTTCTGGG 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM11465 row: a column: 17
High quality sequence stop: 692.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 744)

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI764273.1 GI:15755851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     603045965F1 NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5186200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                        147
                                            Conservative
                                                                                                                           /note="Organ: pooled colon, kidney, stomach; Vector: pCMV-SPDRT6; Site_1: NotI; Site_2: EcoRV (destroyed); RNA source anonymous pool of 3 colons, age 26 yo male, 49 yo female, 71 yo male colon; 46 yo male kidney, and pool of 2 stomachs, 62 yo male and 70 yo female. Library is oligo-dr primed and directionally cloned (EcoRV site is destroyed upon cloning). Average insert size 1.4 kb, insert size range 1-3 kb. Library is normalized and enriched for full-length clones and was constructed by C. 023. Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:5186200"
/clone_lib="NIH_MGC_116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                      /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  resulting molecules were directionally cloned into the ECORI and NotI sites of the pT7T3PAC vector. The library then went through one round of normalization to COT value of 5 based on the methods of Marcelo Bento Soares (Genome Research 6: 791-806, 1996)."
                                   100.08; +1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.9%;
                                                            Score 19; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 19;
; Pred. No.
                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dq
                                                                            DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10;
42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                   0,
                                                                            Length 744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 697
                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

٤,

```
BH395820
LOCUS
                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
BG715056/c
                                                                                        SOURCE
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                 REFERENCE
                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                   Query Match
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                           ORGANISM
                                                                                                                                                                                                                                                             2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                          101 GTGCGGTTGTGGGCGGTGT 119
                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                             GTGCGGTTGTGGGCGGTGT 2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
cDNA Library Preparation: Michael J. Brownstein (NHGRI), Shira
Toshiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov plate: LLAM10679 row: b column: 22
; Anopheles.
1 (bases 1 to 372)
Shetty, J., Malek, J.,
                                         Eukaryota; Metazoa; //
Pterygota; Neoptera;
                                                                                                                                       DNA sequence.
BH395820
                                                                                                                                                                  BH395820 372 bp
AG-ND-119B5.TF ND-TAM Anopheles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence stop: 5.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            602673281F1 NIH_MGC_96 Homo
                                                                          Anopheles gambiae
                                                                                         African malaria mosquito.
                                                                                                                         BH395820.1 GI:17341961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG715056.1 GI:13993987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                     Similarity 100
19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 2405)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence.
                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4795701"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="hypothalamus"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="NIH_MGC_96"
                                                           Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                    3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata;
Primates;
                                            Endopterygota;
                                                                                                                                                                                                                                                                                                                        0
 Koo, H.,
                                                                                                                                                                                                                                                                                                                                    Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2405 bp
                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
 Collins, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                  DNA linea
gambiae genomic
                                                                                                                                                                                                                                                                                                                                    50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nRNA linear EST 08-M
CDNA clone IMAGE:4795701
                                             Diptera;
                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                   Length 2405;
 Gardner, M. and Loftus, B.
                                                                                                                                                                               linear
                                               Nematocera;
                                                                                                                                                                    clone AG-ND-119B5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (NHGRI), Shiraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 08-MAY-2001
                                                                                                                                                                                                                                                                                                                      0;
                                               Culicoidea
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                      0;
```

```
RESULT 15
AW145423/c
                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 18; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142 CTGGAAAAAGTGAAAGCC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253 CTGGAAAAAGTGAAAGCC 270
                                                                                                                                                                                      Unpublished (1999)
Contact: Ralph Quatrano
Leeds/Wash U Moss EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. I
                                                                                                                                                                                                                                                                                                                   Physcomitrella patens
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Bryophyta;
Bryopsida; Punaridae; Funariales; Funariaceae; Physcomitrella.

1 (bases 1 to 386)
Quatrano,R., Bashiardes,S., Cove,D., Cuming,A., Knight,C., Clifton
Outer,M., Hillier,L., Pape,D., Martin,J., Wylie,T., Underwood
Outer,M., Gibbons,M., Harvey,N., Ritter,E., Jackson,Y., McCann,R.,
Waterston,R. and Wilson,R.
Leeds,Wash U Moss EST Project
Email: est@watson.wustl.edu
Libraries were constructed by Dr. Stavros Bashiardes as part of the
Physcomitrella EST program (PEP) at the Univ. of Leeds (UK) and
Washington Univ. in St. Louis (USA) DNA sequencing by: Washington
University Genome Sequencing Center For information on obtaining a
clone please contact: Celia Knight (c.d.knight@leeds.ac.uk)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AW145423 386 bp mRNA line ga20h03.yl Moss EST library PPU Physcomitrella pep_SOURCE_ID:PPU021606 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This clone is from an A. gambiae BAC library (ND-TAM) provided by F.H. Collins and sequenced by The Institute for Genomic Research (TIGR). The BAC library was generated from A. gambiae PEST strain DNA. All DNA was extracted from newly hatched first instar larvae to minimize the inclusion of DNA from microorganisms that inhabit the gut. The DNA is derived from mixed sexes of larvae. The BAC library was constructed at Texas A&M Universty BAC Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Physcomitrella patens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AW145423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seq primer: M13 For Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             University, College Station, Texas 77843-2123, USA using a HindIII partial digest.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 301 838 0208 Fax: 301 838 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Brendan J Loftus
Department of Eukaryotic Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (2001)
Other_GSSs: AG-ND-119B5.TR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission of BAC-end sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW145423.1 GI:6167159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: bjloftus@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9712 Medical Center Dr., Rockville, MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Institute for Genomic Research
                                                                                                                                                        314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="PEST"
/db_xref="taxon:7165"
/clone="AG-ND-119B5"
/clone_lib="ND-TAM"
/note="Vector: pECBAC1; Site_1: HindIII"
1 84 c 66 g 132 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Anopheles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gambiae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from Anopheles gambiae
                                                                                                                                                                                                       Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 372;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                       <u>₹</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     patens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 01-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                      part of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Search completed: October 27, 2002, 22:36:41 Job time: 972.668 secs
                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                  Query Match 3.7%; Sometime 100.0%; I Matches 18; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                            187 GTTGCCTGCAGGGCAGCT 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                            8 GTTGCCTGCAGGGCAGCT 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: -40Rp from Gibco
High quality sequence stop: 373.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                     104 a
                                                                                                                                                                                                                                                                                                                                          /notes Vector: pBluescript SK-; Site_1: EcoRI; Site_2: XhOI; Construction of the cDNA library was carried out using Stratagenes 'Unizap - cDNA synthesis kit'. cDNA contains a XhOI site within it. Following ds cDNA contains a XhOI site within it. Following ds cDNA and sample was digested with XhOI. The result is cDNA with an EcoRI sticky end on one side and a XhOI sticky end on one side and a XhOI sticky Unizap arms. The vector is designed containing the cloned within this pBluescript sequence as well as lambda DNA and cDNA is then packaged using Gold gigapackaging extracts. Library was grown in XLIBlue MRF cells and amplified. The library was exclsed by mass excision using Stratagens 'Mass releases the pBluescript sequence and circularises it as phage) and secreted out of the host cell as phagethat single stranded plasmids that are then packaged (by helper SOLR cells were transformed with phagemids and the library was plated out of the host cell as phagemids. Was plated out on LB-amp plates to select for transformed by using Qulagen Midi prep kit. 2 micro grams of electroporation."

104 a 82 c 113 g 87 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /Organism="Physcomitrella patens"
/db_xref="taxon:3218"
/clone="pep_SOURCE_ID:PPU021606"
/clone="pep_SOURCE_ID:PPU021606"
/tissue_type="protonemata: 7 day old tissue
/lab_host="DH108"
                                                                                                                                                                                                       3.7%; Score 18; DB 9; Length 386; 100.0%; Pred. No. 1.3e+02; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                         0;
                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                    0;
```

В Qy

.

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic - nucleic search, using sw model
                                                                                                                          O
                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                 O
   a
                                                                           000
                                                                                                                                                                                                                                                                                                                                                                             ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 27, 2002, 20:42:44; Search time 248.035 Seconds (without alignments) 7028.450 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-677-374-3
483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2891707 seqs, 1804656691 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pending_Patents_NA_New: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :/cgn2_6/ptodata/1/pna/PCT_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US06_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US07_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US07_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US09_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq:*
/cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq3:*
/cgn2_6/ptodata/1/pna/US10_NEW_COMB.seq3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                          48908
58175
91772
                                                                                                                                                                                                                                                                                                                   39824
                                                                                                                                     453
455
847
2270
2322
2322
2329
2329
                                466
643
644
705
705
                                                                                                                                                                                                                                                                                                                                                                              DB
             PCT-US02-26322-47
US-10-219-999-30827
US-10-108-260A-2343
US-10-108-260-2343
US-10-221-279-4847
US-09-918-995-8784
US-10-027-632-276565
US-10-027-632-276566
US-10-027-632-276566
US-10-027-632-276566
US-10-027-632-173497
US-10-027-632-173498
US-10-027-632-173498
US-10-027-632-173498
US-10-027-632-173498
                                                                                                                                                                                                                                       US-10-053-853A-484

US-10-114-170-137

US-10-053-853A-37

US-10-053-853A-1

US-09-918-995-216
                                                                                                                                                                                                            US-09-919-002-8373
US-10-211-818-27
                                                                                                                                                                                                                                                                                                                  US-10-053-853A-876
                                                                                                                                                                                                                                                                                                                                 US-10-114-170-79
                                                                                                                                                                                                                                                                                                                                               US-10-114-170-252
                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5783414
                                                                                                                                                                                                                                                                                                                                                                           Description
               Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                              Sequence
Sequence
                                                                                                                                                                                                            Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                               Sequence
276565,
276566,
173498,
173498,
22462, A
2948, Ap
261467,
                                                                                                                  27, Appl
47, Appl
30827, A
2343, Ap
2343, Ap
4847, Ap
                                                                                                                                                                                                                          252, App
79, Appl
876, App
486, App
137, App
337, App
1, Appli
216, App
8373, Ap
```

			Ω	C													ဂ	ဂ	ဂ	o
45	44	43	42	41	40	39	38	37	36	ა 5	34	33	32	31	30	29	28	27	26	25
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	18	18	18	18	18
ω .5	3.5	3.5	3.5	ω .5	3. 5					ω .5										3.7
486	459	451	390	369	280	123	123	123	123	123	123	123	123	123	123	11736	2690	2690	2661	1855
80	տ	տ	7	ഗ	5	8	8	œ	œ	8	8	8	ω	œ	œ	ۍ	9	9	9	7
US-10-182-995-1547	US-09-918-995-26505	US-09-918-995-22279	US-10-155-881-6701	US-09-721-544-23832	US-09-540-210B-2218	US-10-203-139-14205	US-10-203-138-6710	US-10-203-137-14750	US-10-203-135-14118	US-10-182-998-6531	US-10-182-997-10762	US-10-182-993-14306	US-10-203-136-14617	US-10-203-134-14602	US-10-182-995-11452	US-09-663-870A-1	US-60-360-039-30818	US-60-360-039-28064	US-60-360-039-32215	US-10-027-632-261468
Sequence 1547,	Sequence 26505	Sequence 22279	Sequence 6701,	Sequence 23832	Sequence 2218,	Sequence 14205	Sequence 6710,	Sequence 14750	Sequence 14118	Sequence 6531,	Sequence 10762	Sequence 14306	Sequence 14617	Sequence 14602	Sequence 11452	Sequence 1, App	Sequence 30818	Sequence 28064	Sequence 32215	Sequence 261468
Αp	, A	, A	Αp	, A	Αþ	, P	Ąρ	· P	` >	Αp	` >	, A	` ≯	` ≯	` ≯	pli	P	, P	, A	,

ALIGNMENTS

```
RESULT 1
US-10-114-170-252/c
; Sequence 252, Application US/lui---;
; GENERAL INFORMATION;
; APPLICANT: Blattner, Frederick R.
Burland, Valerie
                                                                                                                                           TELEFAX: (608) 251-91 INFORMATION FOR SEQ ID NO: 252:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.50 inch.

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Word Perfect 8.0

/CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/453,702
FILING DATE: 03-DEC-1999
APPLICATION NUMBER: 60/110,955
FILING DATE: 04-DEC-1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Novel Sequences of E. coli 0157
NUMBER OF SEQUENCES: 265
CORRESPONDENCE ADDRESS:
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
SEQUENCE DESCRIPTION: SEQ ID
                                                                                                                                                                              REGISTRATION NUMBER: 27386
REFERENCE/DOCKET NUMBER: 91
TELECOMMUNICATION INFORMATION:
TELEPHONE: (608) 251-5000
                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                           TYPE: nucleic acid STRANDEDNESS: doub.
                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/10/114,170 FILING DATE: 01-Apr-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: US
ZIP: 53701-2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Quarles & Brady STREET: 1 South Pinckney Street CITY: Madison
                                                                                                     LENGTH: 12848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Burland,
Porna, Nicole T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rod
                                                           double
                                                                                                                                                              251-9166
  NO:
                                                                                                                                                                                                                             960296.95017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.44Mb storage
```

US-10-114-170-252

Local

Similarity

1larity 100.0%; Score 22; Conservative 0; Mismatch

Mismatches

0,

0,

DB 8;

Length 12848; Indels

```
RESULT 3
US-10-053-853A-876

.: Sequence 876, Application US/10053853A
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear

MOLECULE TYPE: DNA (genomic)
SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
US-10-114-170-79
; Sequence 79, Application US/10114170
; GENERAL INFORMATION:
CENERAL INFORMATION:
CENER
                                                                                                                                                                                                                                  31926 TAATCCGGACACCGGTAACAGC 31947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (608) 251-9
INFORMATION FOR SEQ ID NO: 79:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                      291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/110,955
FILING DATE: 04-DEC-1998
ATTORNEY/AGENT INFORMATION:
NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27386
REFERENCE/DOCKET NUMBER: 960296.95017
TELECOMULICATION INFORMATION:
TELEPHONE: (608) 251-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: US
ZIP: 53701-2113
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch. 1..
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 8.0
CURRENT APPLICATION NUMBER: US/10/114,170
FILING DATE: 01-Apr-2002
CLASSIFICATION NUMBER: US/10/114,170
PRIOR APPLICATION NUMBER: 09/453,702
PRIOR APPLICATION NUMBER: 09/453,702
FILING DATE: 03-DEC-1999
ADDITORMING DATE: 03-DEC-1999
ADDITORMING DATE: 03-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Quarles & Brady
STREET: 1 South Pinckney Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Novel Sequences of E. coli 0157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Blattner, Frederick R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 38155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Madison
                                                                                                                                                                                                                                                                                                                                                         ilarity 100.0%; Pred. No. 0...
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Burland, Nicole T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perna,
Plunkett, ba,
Rod
                                                                                                                                                                                                                                                                                                                                                                                                    4.6%; Score 22;
00.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251-9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Valerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79:
                                                                                                                                                                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.44Mb storage
                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                   Length 38155;
                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
```

```
SHINAGAWA, Hideo

APPLICANT: MAKINO, KOZO

APPLICANT: HAYASHI, Tetsuya
APPLICANT: HAYASHI, Makoto
APPLICANT: HAYASHI, Makoto
APPLICANT: HAYASHI, Makoto
APPLICANT: HAYASHI, Makoto
TITLE OF INVENTION: Polynucleotide molecules and polypeptides
TITLE OF INVENTION: Escherichia coli 0157:H7 and use thereof
CURRENT APPLICATION NUMBER: US/10/053,853A
CURRENT FILING DATE: 2002-05-28
PRIOR APPLICATION NUMBER: JP2001-112010
NUMBER OF SEQ ID NOS: 1866
LENGTH: 48423
TYPE: DNA
TYPE: DNA
                          RESULT 5
US-10-114-170-137/c
; Sequence 137, Application US/10114170
; GENERAL INFORMATION:
APPLICANT: Blattner, Frederick R
Valerie
Valerie
                                                                                                                                                                                                                                                                                        US-10-053-853A-484
                                                                                                                                                                                                            Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Escherichia coli 0157:H7
US-10-053-853A-876
                                                                                                                                                            28594 TAATCCGGACACCGGTAACAGC 28615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: JP2001-112010
PRIOR FILING DATE: 2001-01-24
NUMBER OF SEQ ID NOS: 1866
SEQ ID NO 876
LENGTH: 39824
                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23355 TAATCCGGACACCGGTAACAGC 23376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: HAYASHI, Tetsuya
APPLICANT: OHNISHI, Makoto
APPLICANT: HATTORI, Masahira
APPLICANT: KUROKAWA, Ken
TITLE OF INVENTION: Escherichia coli 0157:H7 and use thereof
FILE REFERENCE: 2002-0060A/MMC/01704
CURRENT APPLICATION NUMBER: US/10/053,853A
CURRENT FILING DATE: 2002-05-28
DETOD ADDITIONATION NUMBER: 15002-05-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: HAYASHI, Hideo
APPLICANT: SHINAGAWA, Hideo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 / Match
Local Similarity 100.0%; Pred. No.
22; Conservative 0; Mismatch
             Burland,
narna, Nicole T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MAKINO, Kozo
Plunkett, Guy
Welch, Rod
                                                  Blattner, Frederick R
                                                                                                                                                                                                                  100.08; PI
100.08; PI
                                                                                                                                                                                                                                      Score 22;
Pred. No.
                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 8;
                                                                                                                                                                                                                                            Length 48423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 39824;
                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
```

CORRESPONDENCE ADDRESS:

ADDRESSEE: Quarles & Brady STREET: 1 South Pinckney Street TITLE OF INVENTION: Novel Sequences of E. NUMBER OF SEQUENCES: 265

coli 0157

```
JILNAGAWA, Hideo

LICANT: MAKINO, KOZO

APPLICANT: HAYASHI, Tetsuya
APPLICANT: CHNISHI, Makoto
APPLICANT: KUROKAWA, Ken
TITLE OF INVENTION: Polynucleotide molecules and polypeptides specific to Enterohemory
TITLE OF INVENTION: Escherichia coli 0157:H7 and use thereof
FILE REFERENCE: 2002-00560/MMC/01704
CURRENT APPLICATION NUMBER: US/10/053,853A
CURRENT TILING DATE: 2001-01-24
RUMBER OF SEO ID NO 337
LENGTH: 58175
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: DNA (genomic); SEQUENCE DESCRIPTION: SEQ ID NO: 137: US-10-114-170-137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
; TYPE: DNA
; ORGANISM: Escherichia coli O157:H7
US-10-053-853A-337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15032 TAATCCGGACACCGGTAACAGC 15011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 137: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/10/114,170
FILING DATE: 01-Apr-2002
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/453,702
FILING DATE: 03-DEC-1999
APPLICATION NUMBER: 60,110,955
FILING DATE: 04-DEC-1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity es 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 53701-2113

COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 incl
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 8.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27386
REFERENCE/DOCKET NUMBER: 960296.95017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Madison
STATE: WI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (608) 251-5000
TELEFAX: (608) 251-9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 48908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.6%; 50-
100.0%; Pred. No.
10e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.50 inch. 1.44Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 48908;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

80

259 AAAGTGAAAGCCGGCCAGG 277

```
; NAME/KEY: misc_feature
; LCCATION: (1)...(453)
; OTHER INFORMATION: n = A,T,C
US-09-918-995-216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: DNA
; ORGANISM: Escherichia coli O157:H7
US-10-053-853A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-053-853A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-918-995-216
                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 216
LENGTH: 453
                                                                                                                                                                                                                                                                                                                                                                                      Sequence 216, Application US/09918995
GENERAL INFORMATION:
APPLICANT: Hyseq, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 1866 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                  Query Match
Best Local
 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                            APPLICANT: Hyseq, Inc.
TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTAINED
TITLE OF INVENTION: FROM VARIOUS CDNA LIBRARIES
FILE REFERENCE: 20411-756
CURRENT APPLICATION NUMBER: US/09/918,995
CURRENT FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR FILING DATE: 1999-01-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Polynucleotide molecules and polypeptides specific to Enterohe TITLE OF INVENTION: Escherichia coli 0157:H7 and use thereof EILE REFERENCE: 2002-0060A/MMC/01704 CURRENT APPLICATION NUMBER: US/10/053,853A CURRENT FILING DATE: 2002-05-28 PRIOR APPLICATION NUMBER: UF2001-112010 PRIOR FILING DATE: 2001-01-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66951 TAATCCGGACACCGGTAACAGC 66930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: HAYASHI, Hideo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 38054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31033 TAATCCGGACACCGGTAACAGC 31054
                                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                          FEATURE:
                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
les 22; Conserv
 Local Similarity
es 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAYASHI, Tetsuya
OHNISHI, Makoto
HATTORI, Masahira
KUROKAWA, Ken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/10053853A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MAKINO, Kozo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SHINAGAWA, Hideo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.6%; Score 22; DB 8; 100.0%; Pred. No. 0.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.6%; Score 22;
00.0%; Pred. No.
 0;
                                                                                      or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                  Score 19; DB 5;
Pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 8;
0.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 91772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 58175;
                                   Length 453;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
```

100 AAAGTGAAAGCCGGCCAGG 118

0;

```
APPLICANT: ROSen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and
FILE REFERENCE: PM030C1N
CURRENT APPLICATION UNMBER: US/10/211,818
CURRENT FILING DATE: 2002-08-05
PRIOR APPLICATION NUMBER: 09/758,470
PRIOR FILING DATE: 2001-01-11
PRIOR FILING DATE: 2000-01-31
PRIOR TELING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: 60/180,628
PRIOR APPLICATION UNMBER: 60/180,628
PRIOR APPLICATION UNMBER: 600/180,628
PRIOR FILING DATE: 2000-02-04
PRIOR FILING DATE: 2000-02-04
PRIOR FILING DATE: 2000-02-04
PRIOR FILING DATE: 2000-02-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-211-818-27
; Sequence 27, A
                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver.
SEQ ID NO 27
LENGTH: 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-919-002-8373
OTHER INFORMATION: n equals a,t,g, or
                                                                      NAME/KEY: misc_feature
LOCATION: (793)
OTHER INFORMATION: n equals
                        NAME/KEY: misc_feature LOCATION: (804)
                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (717)
OTHER INFORMATION: n equals a,t,g, or
                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version 3.0 LENGTH: 455
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISH. Homo sapiens
FEATURE:
NAME/KEV: misc_feature
LOCATION: (1)...(455)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 8373, Ap
GENERAL INFORMATI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/919,002
CURRENT FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: APPLICATION NUMBER: 05/09/919,002
PRIOR FILING DATE: FILING DATE: 1999-07-22
PRIOR APPLICATION NUMBER: APPLICATION NUMBER: US 09/034,341
NUMBER OF SEQ ID NOS: 11203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Liu, Jin
TITLE OF INVENTION: NOVEL CONTIGS OBTAINED FROM VARIOUS CDNA
TITLE OF INVENTION: LIBRARIES
FILE REFERENCE: 20411-752CON1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·09-919-002-8373
Sequence 8373, Aj
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Leshkowitz, Dena
APPLICANT: Liu, Jin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity es 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/10211818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09919002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.9%; Score 19;
100.0%; Pred. No.
ative 0; Mismatc
                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
APPLICANT: TRAN, USEN K.

TITLE OF INVENTION: INTRACELLULAR SIGNALING MOLECULES
FILE REFERENCE: PF-1145 PGT
CURRENT APPLICATION NUMBER: PCT/US02/26322
CURRENT FILING DATE: 2002-08-16
PRIOR APPLICATION NUMBER: US 60/313,245
PRIOR FILING DATE: 2001-08-17
PRIOR APPLICATION NUMBER: US 60/314,751
PRIOR FILING DATE: 2001-08-24
PRIOR FILING DATE: 2001-08-24
DRIOR PILING DATE: 2001-08-24
           PRIOR APPLICATION NUMBER: US 60/316,752
PRIOR FILING DATE: 2001-08-31
PRIOR APPLICATION NUMBER: US 60/316,847
PRIOR FILING DATE: 2001-08-31
                                                                                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
PCT-US02-26322-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-211-818-27
                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                   PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (833)
OTHER INFORMATION: n equals a,t,9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (812)
OTHER INFORMATION: n equals a,t,g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               290 AAAGTGAAAGCCGGCCAGG 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
les 19; Conserv
                                                                                                                                                                                     MARQUIS, Joseph
JACKSON, Jennifer L.
                                                                                                                                                                                                                                      NGUYEN, Danniel B.
HONCHELL, Cynthia D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BECHA, Shanya D.
LEE, Ernestine A.
WARREN, Bridget A.
                                                                                                                                                                                                                                                                         DING,
                                                                                                                                                                                                                                                                                                         SPRAGUE, William W.
                                                                                                                                                                                                                                  LUO, Wen
                                                                                                                                                                                                                                                                               HAFALIA, April J.A.
                                                                                                                                                                                                                                                                                                                                                             THANGAVELU, Kavitha
                                                                                                                                                                                                                                                                                                                                                                          ISON, Craig H.
                                                                                                                                                                                                                                                                                                                                                                                      BOROWSKY, Mark L.
                                                                                                                                                                                                                                                                                                                                                                                                    GIETZEN, Kimberly J. LAL, Preeti G.
                                                                                                                                                                                                                                                                                                                                                                                                                             DUGGAN, Brendan M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    BAUGHN, Mariah R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YAO, Monique G.
RAMKUMAR, Jayalaxmi
RICHARDSON, Thomas W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INCYTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LEHR-MASON, Patricia M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMERLING, Brooke M. FORSYTHE, Ian J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRIFFIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWARNAKAR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YUE,
NUMBER: US 60/322,188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ilarity 100.0%; | Conservative 0;
                                                                                                                                                                                                                                                                                                                                       Sally
                                                                                                                                                                                                                                                                                                                                                                                                                                           Joana X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dyung Aina M.
                                                                                                                                                                                                               Narinder K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENOMICS, INC.
                                                                                                                                                                                                                                                                                                                       Vicki S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jennifer A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anita
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.98,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 19;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

FILING DATE: 2001-09-14

APPLICATION NUMBER: US 60/326,390

```
APPLICANT: Cao, Yongwei
APPLICANT: Edgerton, Michael D
APPLICANT: Hinkle, Gregory J.
APPLICANT: Kovalic, David K.
APPLICANT: Kovalic, David K.
APPLICANT: Liu, Jingdong
APPLICANT: Stein, Joshua
ITITLE OF INVENTION: CDNA SEQUENCES AND USES FOR PLANT IMPROVEMENT
ETILE REFERENCE: 38-10(52776)C
CURRENT APPLICATION NUMBER: US/10/219,999
CURRENT FILING DATE: 2001-08-15
PRIOR APPLICATION NUMBER: US 60/324,109
PRIOR APPLICATION NUMBER: US 60/312,544
PRIOR FILING DATE: 2001-08-15
NUMBER OF SEQ ID NOS: 63520
SEQ ID NO 30827
TENGTH: 2322
                                                                         RESULT 13
US-10-108-260A-2343
                                                                                                                                                        밁
                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                          US-10-219-999-30827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-219-999-30827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No: 3744219CB1
PCT-US02-26322-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 2001-09-28
PRIOR APPLICATION NUMBER: US 60/328,952
PRIOR FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 60/345,468
PRIOR FILING DATE: 2001-10-19
PRIOR APPLICATION NUMBER: US 60/372,499
PRIOR FILING DATE: 2002-04-12
NUMBER OF SEQ ID NOS: 90
SOFTWARE: PERL Program
Sequence 2343, Application US/10108260A
GENERAL INFORMATION:
APPLICANT: HELIX RESEARCH INSTITUTE
APPLICATE: HELIX RESEARCH INSTITUTE
TITLE OF INVENTION: NOVEL full length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.0%; F
Matches 19; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 30827,
                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 47
                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 2270
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
LOCATION: (1571)..(2227)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 2322
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                    912 AAAGTGAAAGCCGGCCAGG 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/10219999
                                                                                                                                                                                                                                                 3.9%; Score 19;
100.0%; Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.9%; Score 19; DB
100.0%; Pred. No. 5.
ive 0; Mismatches
                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                   No.
                                                                                                                                                                                                                                                                  DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 2270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                    Length 2322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
RESULT 14
US-10-108-260-2343
; Sequence 2343, Application US/10108260
; GENERAL INFORMATION:
             Qy
                                                                                                              ; LENGTH: 440
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-221-279-4847
                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
US-10-221-279-4847/c
; Sequence 4847, Application US/10221279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-108-260A-2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-108-260-2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/10/108,260
CURRENT FILING DATE: 2002-03-27
NUMBER OF SEQ ID NOS: 5458
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 2343
LENGTH: 2329
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 2343
LENGTH: 2329
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                              SOFTWARE: Custom
SEQ ID NO 4847
                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                  Matches
                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/221,279
CURRENT FILING DATE: 2002-09-06
PRIOR APPLICATION NUMBER: 09/574,454
PRIOR FILING DATE: 2000-05-19
                                                                                                                                                                                                                                                                                                                                APPLICANT: Hyseq, Inc TITLE OF INVENTION: Novel Nucleic Acids and Polypeptides FILE REFERENCE: 21272-046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: HELIX RESEARCH INSTITUTE TITLE OF INVENTION: Novel full length cDNA FILE REFERENCE: H1-A0106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/108,260A
CURRENT FILING DATE: 2002-03-27
NUMBER OF SEQ ID NOS: 5448-
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: 09/519,705
PRIOR FILING DATE: 2000-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: H1-A0106
                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 12360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   988 AAAGTGAAAGCCGGCCAGG 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     988 AAAGTGAAAGCCGGCCAGG 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259 AAAGTGAAAGCCGGCCAGG 277
14 TGCAGGGCAGCTCTCTGA 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.9%;
Local Similarity 100.0%;
es 19; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 100.0%;
nes 19; Conservative
                                                               Local
                                              l Similarity
18; Conserv
                                            3.7%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.9%; Score 19; DB 8
100.0%; Pred. No. 5.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                0
                                                              Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 19; DB 6;
Pred. No. 5.2;
                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                              DB 8;
18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2329;
                                                                               Length 440;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

Db 128 TGCAGGGCAGCTCTCTGA 111

Search completed: October 28, 2002, 00:39:40 Job time: 373.035 secs

Sequence

3, Appli 6, Appli 6, Appli 1, Appli 1, Appli 1, Appli 1, Appli 1, Appli 6, Appli 16, Appli 16, Appli 57, Appli 57, Appli 57, Appli 57, Appli 57, Appli 57, Appli

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                  ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
      Pred.
score
and is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB DB
                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                               No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-677-374-3
483
1 atgcgtggttgcct
                                                                                                                                                                                                                                                                                                                                                                               Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OLIGO_NUC , Gapop 60.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     October 27, 2002, 20:19:49; Search time 35.8705 Seconds (without alignments) 3307.484 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                383533 seqs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Issued_Patents_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/Packfiles1.seq:*
    Length
                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapext 60.0
               4 US-09-941-941B-26
1 US-08-53-88BA-1
1 US-08-53-88BA-1
1 US-08-53-88BA-2
1 US-09-032-742-1
4 US-09-032-742-1
5 US-09-032-742-1
6 US-09-032-742-1
6 US-09-032-742-1
7 US-09-032-742-1
7 US-09-032-742-1
7 US-09-032-742-1
7 US-08-403-852D-5
7 US-08-10-64B5-5
7 US-08-10-64B5-5
7 US-08-501-572-6
7 US-08-164-839-28
7 US-08-164-839-28
7 US-09-332-200-68
                                                                                                                                                                                                                                                                    2 US-08-916-917-3

2 US-08-972-631-3

2 US-08-972-629-3

2 US-08-972-630-3

2 US-08-972-630-3

3 US-08-672-211-3

3 US-09-225-170-3

4 US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chosen
                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             parameters:
Sequence 3, Appli
Sequence 1, Appli
Sequence 26, Appli
Sequence 2, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 13, Appli
Sequence 15, Appli
Sequence 18, Appli
Sequence 19, Appli
Sequence 5, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 28, Appli
Sequence 6, Appli
Sequence 28, Appli
Sequence 28, Appli
Sequence 6, Appli
                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
US-08-916-917-3
                                                                    ;
US-08-916-917-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           00000 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application Patent No. 5856132
GENERAL INFORMATION:
                             Query Match
Best Local Similarity
                  Matches
                                                                                                                    TELEFAX: 650-493-5556
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 3808 base pairs
                                                                                                                                                                                                                          PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/672

PILING DATE: 27-JUN-1996

ATTORNEY/AGENT INFORMATION:

NAME: Abrams, Samuel B

REGISTRATION NUMBER: 30,60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Stephens, Len
APPLICANT: Hawkins, Phillip Thomas
APPLICANT: Braselmann, Sylvia
TITLE OF INVENTION: G-BETA-GAMMA REGULATED
TITLE OF INVENTION: PHOSPHATIDYLINOSITOL-3' KINASE
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds, LLP
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows
SOFTWARE: FASK-SEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/916,917
FILING DATE: 15-AUG-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 10036-2811
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-493-4935
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Penn
STREET: 1155 Av
CITY: New York
STATE: NY
                                                                                          STRANDEDNESS: single
                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER:
                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application
               Conservative
                                                                                   linear
                                                                                                                                                                                                                                                                                                   . US/08/916,917
. 15-AUG-1997
ON: 435
                             3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/08916917
                                                                                                                                                                                                                                                                                  08/672,211
                                                                                                                                                                                                                       30,605
FR: 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-063-950-3
US-09-232-191-6
US-09-232-197-6
US-09-232-197-6
US-09-232-201-6
US-09-232-201-6
US-09-63-950-1
US-08-468-8568-1
US-08-468-8568-6
US-08-468-8568-6
US-08-468-859A-6
US-08-468-859A-6
US-08-468-859A-6
US-08-468-859A-6
US-08-468-859A-7
US-08-468-859A-7
US-08-468-859A-57
US-08-468-237A-57
US-08-486-273A-57
US-08-940-035A-57
US-08-940-035A-57
US-08-940-035A-57
                0;
                             Score 18;
Pred. No.
                                                                                                                                                                                                                  8549-0006-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                Mismatches
                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                   2.0b
```

00000000000000000

Length 3808; Indels

0,

0

```
NAME: Halluin, Albert P.
REGISTRATION NUMBER: 25.277
REFERENCE/DOCKET NUMBER: 25.439-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)854-3660
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 3808 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
MOLECULE TYPE: CDNA
US-08-972-631-3
                                                                                                                                                          RESULT 3
US-08-972-629-3
                                                                                                                                                                                                                      ₽
                                                    GENERAL INFORMATION:

APPLICANT: Stephens, Len
APPLICANT: Hawkins, Phillip T.

TITLE OF INVENTION: G-BETA-GAMMA REGULATED
TITLE OF INVENTION: PHOSPHATIDYLINOSITOL-3'
                                                                                                                                Patent No. 5859201
                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                   CORRESPONDENCE ADDRESS:
                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
US-08-972-631-3
                                                                                                                                                                                                        2951 TCAGAAACAGGAAATCTA 2968
                                                                                                                                                                                                                           411 TCAGAAACAGGAAATCTA 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/08972631 Patent No. 5856133 GENERAL INFORMATION:
              STREET:
                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/672,211
FILLING DATE: 27-JUN-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Rel-Base #1.0, Version #1.30
APPLICATION UNBER: US/08/972,631
FILING DATE:
CTASCTOTE
                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy (
COMPUTER: IBM PC COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 2730 Sand Hill Road
CITY: Menio Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                           1 Similarity 100.0%; F
Menlo Park
              2730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94025
     Pennie & Edmonds
30 Sand Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stephens, Len

f: Stephens, Len

f: Hawkins, Phillip T.

INVENTION: G-BETA-GAMMA REGULATED
PHOSPHATIDYLINOSITOL-3' KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                 PHOSPHATIDYLINOSITOL-3' KINASE
                                                                                                                                                                                                                                                                     Score 18; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           8549-0005-999
                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                          Length 3808;
                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-08-972-630-3
                                                                                                                                                                                                                                                                                                                                                                                                                                       Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                             94025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94025
```

```
CLASSIFICATION:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/672,211
FILING DATE: 27-JUN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Halluin, Albert P.
REGISTRATION NUMBER: 25,277
REGISTRATION NUMBER: 25,277
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/08972630
Patent No. 5869271
GENERAL INFORMATION:
APPLICANT: Stephens, Len
APPLICANT: Hawkins, Phillip T.
TITLE OF INVENTION: G-BETA-GAMMA REGULATED
TITLE OF INVENTION: HOSPHATIDYLINOSITOL-3' KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 3808 base pairs:
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: unknown
US-08-972-629-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 3.7%;
Best Local Similarity 100.0%;
Matches 18; Conservative
                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                        STREET: 2/JUNE STREET: 2/JUNE STREET: Menlo Park CTATE: California
                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 2730 Sand Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 85.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)854-3660
TELEFAX: (415)854-3694
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                  APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2951 TCAGAAACAGGAAATCTA 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              411 TCAGAAACAGGAAATCTA 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 3808 base pair
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 27-JUN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Halluid, Albert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Halluin, Albert P. REGISTRATION NUMBER: 25,277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             California
     NUMBER:
                                                                                                                                                          US/08/972,630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US_08/672,211
8549-0005-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/972,629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18; DB 2;
Pred. No. 3.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8549-0005-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3808;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

0,

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
US-08-672-211-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
밁
                                                                                                                     us-08-672-211-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-972-630-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/08672211 Patent No. 5874273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 3.7%;
Best Local Similarity 100.0%;
                                                          Matches
                                                                                      Query Match
                                                                                                                                                                                                       TELEPHONE: (415)854-3660
TELEFAX: (415)854-3694
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (415)854-3694
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 25,277
REFERENCE/DOCKET NUMBER: 85
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)854-3660
                                                                                                                                  TOPOLOGY: un
                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: Halluin, Albert P.
                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Hawkins, Phillip T.
TITLE OF INVENTION: G-BETA-GAMMA REGULATED
TITLE OF INVENTION: PHOSPHATIDYLINOSITOL-3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2951 TCAGAAACAGGAAATCTA 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
   2951 TCAGAAACAGGAAATCTA 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              411 TCAGAAACAGGAAATCTA 428
                             411 TCAGAAACAGGAAATCTA 428
                                                                       Local
                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/672,211
FILING DATE: 27-JUN-1996
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: single TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Menlo Park
                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3808 base pairs
                                                                                                                                                                                           3808 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2730 Sand Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (415)854-3694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stephens, Len
                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (415)854-3660
                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                               Floppy disk
                                                    3.7%; but
100.0%; Pr
... 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PHOSPHATIDYLINOSITOL-3'
                                                         Score 18; DB; Pred. No. 3.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                 8549-0005-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 18;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ.
                                                                        DB 2;
3.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                          0;
                                                                                     Length 3808;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 3808;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                          Indels
                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                          0
```

RESULT 6

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-225-170-3
                                                                                                                                                                                                                                                                                     US-09-103-840A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      us-09-225-170-3
              NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver.
SEQ ID NO 1
                                                                                                                                                                                                                                 Sequence 1, Applicat Patent No. 6294328 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/09225170 Patent No. 6017763
                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                 APPLICANT: FRASER, Claire M.

APPLICANT: VENTER, John C.

TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM TITLE OF INVENTION: TUBERCULOSIS

FILE REFERENCE: 24366-2007.00

CURRENT APPLICATION NUMBER: US/09/103,840A

CURRENT FILING DATE: 1998-06-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION: Stephe
                                                                                                                                                                                              APPLICANT: FLEISCHMAN, Robert D. APPLICANT: WHITE, Owen R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 85-
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-493-4935
TELEPAX: 650-493-5556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 08/9: FILING DATE: 15-AUG-1997 ATTORNEY/AGENT INFORMATION:
ENGTH: 4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 3808 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                            2951 TCAGAAACAGGAAATCTA 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hawkins, Phillip Thomas APPLICANT: Braselmann, Sylvia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                411 TCAGAAACAGGAAATCTA 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: Windows
SOFTWARE: FastSEQ for Windows Version 2.0b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA
ZIP: 10036-2811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 1155 AV CITY: New York STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Abrams,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΥN
                                                                                                                                                                                            WHITE, Owen R.
                                                                                                                                                                                                                                                                     Application US/09103840A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Pennie & Edmonds, LLP
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3808 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stephens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Samuel
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G-BETA-GAMMA REGULATED PHOSPHATIDYLINOSITOL-3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08/916,917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/09/225,170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30,605
                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8549-0006-999
                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3808;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

0

0

```
RESULT 9
US~08-553-888A-1/c
                                  SOFTMARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/553,888A
FILING DATE: 11/06/95
CLASSIFICATION: 455
ATTORNEY/AGENT INFORMATION:
NAME: O'Dea, Sean W.
REGISTRATION NUMBER: 37690
REGISTRATION NUMBER: 37690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Tulipa Edulis
US-09-541-941B-26
                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08553888A Patent No. 5723293
GENERAL INFORMATION:
APPLICANT: Huang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Wang, Jun
APPLICANT: Shaw, Pang Chui
APPLICANT: Shaw, Pang Chui
APPLICANT: Shaw, Pang Chui
APPLICANT: Ngan, But/and Fai Ngor Karenda Ngan
TITLE OF INVENTION: POLYMERASE CHAIN REACTION - RESTRICTION FRAGMENT LENGTH POLYMORPH
FILE REFERENCE: 2913/52188-ZA
CURRENT APPLICATION NUMBER: US/09/541,941B
CURRENT FILING DATE: 2000-04-03
SOFTWARE: Patentin version 3.1
LENGTH: 754
TYDE: NNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-541-941B-26/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 2210673 CAGGAACGCCGTCAGCAG 2210656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 3.5%; Sc Best Local Similarity 100.0%; F Matches 17; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Mycobacterium tuberculosis
; OTHER INFORMATION: H37Rv
US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 26, Application US/09541941B Patent NO. 6309840 GENERAL INFORMATION:
                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.44 Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hoffmann & Baron, LLP
STREET: 350 Jericho Turnpike
CITY: Jericho
STATE: New York
                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                        COMPUTER: IBM CON OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 436 GCGTGCCCTCAGCCGGA 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   413 GCGTGCCCTCAGCCGGA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      355 CAGGAACGCCGTCAGCAG 372
                                                                                                                                                                                                                            11753
                                                                                                                                                           IBM compatible SYSTEM: MS-DOS
                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                            DETERMINING RH BLOOD GROUP GENOTYPE
                                                                                                                                                                                                                                                                                                                                           DIAGNOSTIC METHOD AND KIT FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.7%; 5cc
100.0%; Pr
                             454-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 17; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 18; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4; Length 754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4411529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
RESULT 11
US-09-032-742-1/c
; Sequence 1, Application US/09032742
; Patent No. 6255089
                                                                                              В
                                                                                                                       Qγ
                                                                                                                                                                                                            US-08-553-888A-2
                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-08-553-888A-2/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: O'Dea, Sean W.
REGISTRATION NUMBER: 37690
REFERENCE/DOCKET NUMBER: 454-(
TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 822-3550
                                                                                                                                                                                                                                             INFORMATION FOR SEO ID NO: 2: SEQUENCE CHARACTERISTICS: LBNGTH: 1466 nucleotides TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-553-888A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTY 11753
ZIP: 11753
ZOMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50
TWENTER: IBM COMPATIBLE
TWENT: MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08553888A
Patent No. 5723293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 3.5%; Score 17; Best Local Similarity 100.0%; Pred. No. Matches 17; Conservative 0; Mismatc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                   649 GCTCTCTGATCATTATC 633
                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: doub
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: MS-DOS
SOFTWARE: WORDERSTECT
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/553,888A
FILING DATE: 11/06/95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (516) 822-3550
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1384 minor
                                                                                                    23 GCTCTCTGATCATTATC 39
                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Hoff
STREET: 350 Jes
CITY: Jericho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: 1
COUNTRY:
ZIP: 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     635 GCTCTCTGATCATTATC 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
TELEPHONE: (516) 822-3550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23 GCTCTCTGATCATTATC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New York
                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3: Hoffmann & Baron,
350 Jericho Turnpike
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Huang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Diskette, 3.50 inch, 1.44 Mb storage
                                                                                                                                                                                                                                     double
                                                                                                                                        100.08; +1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DIAGNOSTIC METHOD AND KIT FOR DETERMINING RH BLOOD GROUP GENOTYPE
                                                                                                                                                          Score 17;
Pred. No
                                                                                                                                                                                                                                                                                                                                                   454-5
                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                          No.
                                                                                                                                                              DB 1; Length 1466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

В Q

COUNTRY:

0,

GENERAL INFORMATION:

CURRENT APPLICATION DATA:

```
; MOLECULE TYPE: US-09-032-742-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-032-742-12/c
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
                                                                                                                                                                                                                                                                                                                                                                 Patent No. 6255089
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: (610) 431-1703
TELEFAX: (610) 431-4181
INFORMATION FOR SEQ ID NO: 1:
ZIP: 19380-0053
ZIP: 19380-0053
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1566 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: STEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/09/032,742
FILING DATE: 27-FEB-1998
CLASSIFICATION: 536
CLASSIFICATION: 536
                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Laurence Weinberger
STREET: 882 S. Matlack Street, Suite 103
STREET: P.O. Box 1663
                                                                                                                                                                                                                                                                                                        APPLICANT: Teitler, Milt
APPLICANT: Herrick-Davis, Katharine
APPLICANT: Egan, Christina C.
                                                                                                                                                                                                                                                    TITLE OF INVENTION: Constitutively Activated Serotonin TITLE OF INVENTION: Receptors NUMBER OF SEQUENCES: 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1062 TTACAACAAACAGGAA 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Herrick-Davis, Katharine APPLICANT: Egan, Christina C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345 TTACAACAAACAGGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Weinberger, Laurence REGISTRATION NUMBER: 27,965 REFERENCE/DOCKET NUMBER: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Laurence Weinberger
STREET: 882 S. Matlack Street, Suite 103
STREET: P.O. Box 1663
                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                    2, Application US/09032742 6255089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19380-0053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           West Chester
                                                                                                                                                         West Chester
                                                                                                                                         PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Egan, Christina C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Teitler, Milt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; |
rative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Constitutively Activated Serotonin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3086-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
; MOLECULE TYPE: DNA (genomic) US-09-032-742-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
US-09-032-742-13/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
; TOPOLOGY: 1;
; MOLECULE TYPE:
US-09-032-742-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 13, Application US/09032742 Patent No. 6255089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                TELEFAX: (610) 431-418
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (610) 431-4181
INFORMATION FOR SEQ ID NO: 12:
                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: Laurence Weinberger
STREET: 882 S. Matlack Street, Suite 103
STREET: P.O. Box 1663
CITY: West Chester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Teitler, Milt
APPLICANT: Herrick-Davis, Katharine
APPLICANT: Egan, Christina C.
TITLE OF INVENTION: Constitutively &
TITLE OF INVENTION: Receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1062 TTACAACAAACAGGAA 1047
                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION: NAME: Weinberger, Lauren
                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (610) 431-1703
                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345 TTACAACAAACAGGAA 360
                                                                                                                                                                                 NAME: Weinberger, Laurence REGISTRATION NUMBER: 27,96 REFERENCE/DOCKET NUMBER: 3
                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
TOPOLOGY: lir
                                                STRANDEDNESS:
                                                                                                                                                                                                                                                    CLASSIFICATION: 536
                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/0 FILING DATE: 27-FEB-1998
                                                                                                                                                                                                                                                                                                                                                 COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/0 FILING DATE: 27-FEB-1998
                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match 3.3%;
Local Similarity 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                     19380-0053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid
                                                                 nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Weinberger, Laurence RATION NUMBER: 27,965
                                                                                                                                                                                                                                                                                                                                                                                                                                     PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                  IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                  (610)
                 DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                single
                                                                                                            0) 45
) 431-4181
) NO: 13:
                                                                                                                                                    431-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Constitutively Activated Serotonin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09/032,742
                                                                                                                                                                                                                                                                                 US/09/032,742
                                                                                                                                                                                                27,965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 16; Pred. No.
                                                                                                                                                                                    3086-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3086-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                    Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4; Length 1566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

0;

```
US-09-032-742-16/c

: Sequence 16, Application US/09032742

: Patent No. 6255089

: GENERAL INFORMATION:
                                                                                                                                                                                                             B
                                                                                                                                                              RESULT 15
                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (gen
US-09-032-742-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent NO. PATENTIAN:
GENERAL INFORMATION:
APPLICANT: Teitler, Milt
APPLICANT: Herrick-Davis, Katharine
APPLICANT: Egan, Christina C.
TITLE OF INVENTION: Constitutively Act
TITLE OF INVENTION: Receptors
TITLE OF SEQUENCES: 25
                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:

NAME: Weinberger, Laurence
REGISTRATION NUMBER: 27,965
REFERENCE/DOCKET NUMBER: 3086-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (610) 431-1703
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-032-742-15/c
                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 15, Application US/09032742 Patent No. 6255089
           APPLICANT: Teitler, Milt
APPLICANT: Herrick-Davis, Katharine
APPLICANT: Egan, Christina C.
TITLE OF INVENTION: Constitutively /
TITLE OF INVENTION: Receptors
                                                                                                                                                                                                 1062 TTACAACAAACAGGAA 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                 345 TTACAACAAACAGGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION NUMBER: US/09/032,742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1062 TTACAACAAACAGGAA 1047
                                                                                                                                                                                                                                                                    Local Similarity
nes 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/OS
FILING DATE: 27-FEB-1998
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            345 TTACAACAAACAGGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19380-0053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       West Chester
                                                                                                                                                                                                                                                                                                                                                                                                       1566 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3E: Laurence Weinberger
882 S. Matlack Street, Suite 103
P.O. Box 1663
                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                            DNA (genomic)
Receptors
25
                Constitutively Activated Serotonin
                                                                                                                                                                                                                                                                           3.3%; Score 16;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Constitutively Activated Serotonin
                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3086-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 16;
Pred. No.
                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                             DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
39;
                                                                                                                                                                                                                                                                                       Length 1566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1566;
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

0;

:

```
STRANDEDNESS:

TOPOLOGY: lin.

MOLECULE TYPE: 1
US-09-032-742-16
Search completed: October 27, 2002, 23:22:22 Job time: 1738.87 secs
                                                                  В
                                                                                              Qy
                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 3086
TELECOMMUNICATION INFORMATION:
TELEPHONE: (610) 431-1703
TELEPAX: (610) 431-4181
INFORMATION FOR SEQ ID NO: 16;
SEQUENCE CHARACTERISTICS:
                                                                                                                           Matches
                                                                                                                                                       Query Match
                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/09/032
FILING DATE: 27-FEB-1998
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Weinberger, Laurence
REGISTRATION NUMBER: 27,965
REGISTRATION NUMBER: 27,965
                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM CC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                       345 TTACAACAAACAGGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Laurence Weinberger
STREET: 882 S. Matlack Street, Suite 103
STREET: P.O. Box 1663
CTIY: West Chester
                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19380-0053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PA
                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                              linear
                                                                                                                                                                                              DNA (genomic)
                                                                                                              3.3%; Su
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                        US/09/032,742
                                                                                                                Score 16; DB;
b; Pred. No. 39;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                  3086-4
                                                                                                                                   DB 4;
                                                                                                                 0;
                                                                                                                                             Length 1566;
                                                                                                                Indels
                                                                                                              0;
                                                                                                             Gaps
```

DNA encoding novel

```
Title:
Perfect score:
Sequence:
                                                                                                                                            Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic -
                a
                                                           a
                                                                                    O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on ::
                                                                                                                                                                                                                                score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 0B
                                                                                                                                             Score
                                                                                                                                                                                                                 is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
    118
104
102
75
74
40
                                                                                                                                                                                                              No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                N_Geneseq_032802:*

| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1980.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1981.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1982.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1986.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1986.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1992.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1993.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1993.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1993.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*
| SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic search, using sw
                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     October 27, 2002, 17:46:54 ; Search time 122.349 Seconds (without alignments) 6777.910 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OLIGO_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 483
    100.0
100.0
24.4
21.5
21.1
15.5
15.3
8.3
4.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1736436 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-677-374-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgcgtggttgcctgcaggg....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  satisfying chosen
                                                                                                                                             Length
  483
768
118
110
102
94
111
110
3833
                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            858457221 residues
    2222222222
                                                                                                                                             Ħ
  AAF86247
AAF86254
AAF86252
AAF86255
AAF86255
AAF86251
AAF86251
AAF862577
                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3472872
DNA sequence of E.
DNA sequence of cl
PCR primer #4 used
PCR primer #5 used
PCR primer #5 used
PCR primer #1 used
PCR primer #1 used
PCR primer #6 used
PCR primer #6 used
                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
AAF86247
    PRX TXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ဂ ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; ds.
    17-SEP-1999;
                              17-SEP-1999;
                                                           17-MAR-2001
                                                                                       CA2281913-A1
                                                                                                                                                                                                                              Synthetic.
                                                                                                                                                                                                                                             Piscirickettsia
                                                                                                                                                                                                                                                                                                                                DNA sequence of E. coli optimised ospA gene 17E2
                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                      AAF86247;
                                                                                                                                                                                                                                                                                                                                                                                                                    AAF86247 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99CA-2281913
                              99CA-2281913
                                                                                    /partial
/product= "OspA"
/note= "Genus specific 17kDa antigen, the sequence does
/note= not include a stop codon"
                                                                                                                                                                                                                                               salmonis
                                                                                                                                                                                        1..483
                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2562
1029
1300
1356
3684
3808
3808
3808
3808
11330
11330
11736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                     483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS 22652

AAS 29545

AAS 199682

AAZ 68405

ABA48015

ABA65900

ABA3298

AAK40045

AAI 20829

AAI 46064

AAI 106540

AAS 56550

AAI 46064

AAI 66540

AAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAI59154
AAH52010
AAT66951
AAS9780
AAS84339
AAV04634
AAV74100
AAZ86813
AAS68250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS22652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human map-related
Human breast cell
Human foetal liver
Probe #11452 for g
Human brain expres
Human bone marrow
Probe #10762 for g
Probe #10762 for g
Probe #1531 used t
Human breast cell
Human foetal liver
Probe #1547 for ge
Human bone marrow
Probe #1548 for ge
Probe #1533 used t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human polynucleoti
Mycobacterium tube
Asialoglycoprotein
Propionibacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ripening banana pu
Human olfactory re
Human olfactory re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Propionibacterium Mycobacterium tube
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Propionibacterium
Human cDNA encodin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pig p120 regulator DNA encoding novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Porcine G-protein
```

```
RESULT
                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                  DЪ
                                                                                                                                                                                                                                                                                      γ
                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                       ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                 481
                                                        481
                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                361 CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                  361
                                                                                                                                                                        301
                                                                                                                                                                                          241 CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                    181 CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                181 CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, piscirickettsia salmonis. The method comprises administering an immunogenic amount of a particularly poikilothermic fish, against the bacterial pathogen for protecting animals, rickettsial septicaemia (sr.) and other rickettsial septicaemia (sr.) and other rickettsial diseases. The protecting against the bacterial pathogen rickettsial septicaemia (sr.) and other rickettsial diseases. The present DNA which has been optimised for expression in Escherichia coli to encode the p. salmonis ospa protein. An Ospa protein anti-Ospa antibody research is used in a vaccine to create an
                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 483 BP; 108 A; 127 C; 148 G; 100 T; 0 other;
                                AAA
                                                                                                                                                                                                                                                                                                                              61 GCCCAGAACTTCAGCCCCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTGTT
                                                   AAA 483
                                                             GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA 480
                                                   GAAATCTACGGCACCGCGTGCCCTCAGCCGGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                           CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                        Example 3; Fig 4C; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                             ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAA
                                                                                                                                                                                                       CTGAACCAGTCTCTGGAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                            _
                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity 100. es 483; Conservative
                                                                                                                                                                                                                                                                                           GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                        483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB81127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 483; DB 22;
Pred. No. 7.1e-243;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 483;
                                                   480
                                                                                                                                              360
                                                                                                                                                                                                                300
                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

В Ş В Qy Дb δÃ Дb Qγ

```
δÃ
                                                                                                                            Matches 483;
                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FT FT FT FT FT FT FT FT FT XX XX PD PD XX XX PD PD XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF86248
XX
AAF8
AC AAF8
XX
AC AAF8
XX
DT 11-J
XX
DF DNA
XX
POIK
KW POIK
KW VACC
KW SRS;
XX
OS Pisc
OS Pisc
XX
FT CDS
FT CDS
FT CDS
FT TT
FT misc
                                                                                                    This invention relates to a method for the protection against infection of a poskilothermic fish by the bacterial pathogen, Piscirickettsia Salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals, particularly poskilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial pathogen sequence represents P. salmonis OspA DNA termed C1PE2 optimised for expression in Eschericha coli fused to DNA encoding an undefined N-terminal fusion partner. The protein encoded by this fusion construct is used in a vaccine to create an anti-OspA antibody response.
                                                                         Local
1 ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTGGGTTGC 60
                                                                                                                                                                                                                                                                                  Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                        Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the Ospa protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                       (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                              Kay WW, Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Poikilothermic fish, Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease SRS; 17E2; fusion construct; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86248 standard; DNA; 768
                                                                                                                                                                                                                                                                                                                                                                         2001-316844/34.
                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                               AAB81128.
                                                        Conservative
                                                                                                  220 A; 183 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of c17e2 ospa construct with N-terminal fusion partner.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= b
/note= "DNA (
286..768
                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Optimised OspA construct c17E2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
1..285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product= "C17E2 OspA with N-terminal fusion
/note= "No stop codon is given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                             Kuzyk MA;
                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
                                             Score 483; DB 22;
Pred. No. 7.1e-243;
Mismatches 0;
                                                                                          190 G; 175 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      undefined N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fusion partner"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   partner"
                                    0;
```

ŕ

```
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                            Poikilothermic fish; Piscirickettsia salmonis; vaccine; OspA; salmonid rickettsial septicaemii SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                             (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A
                                                                                                                                                                           17-SEP-1999;
                                                                                                                                                                                                17-MAR-2001.
                                                                                                                                                                                                                    CA2281913-A1
                                                                                                                                                                                                                                         Piscirickettsia
        Example
                             vaccine
                                       septicaemia
                                                 Method
                                                                                         Kay WW,
                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                       PCR primer
                                                                                                                                                                                                                                                                                                                          11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                     AAF86254 standard; DNA; 118
                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  466
                                                                                                                                                                                                                                                                                                                                                                                                                        766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCCGCCACCGGTGCGGTTGTGGGCGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGC
                           for protecting poikilothermic fish against salmonid rickettsial aemia and other rickettsial diseases comprises administering a e containing the OspA protein of Piscirickettsia salmonis
         ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                            483
                                                                                                                                                                                                                                                                                                                                                                                                                        768
                                                                                         Burian J,
       Fig
                                                                                                                                                                                                                                                                                                      #4 used in cloning
                                                                                                                                                                                                                                                          spA; salmonid rickettsial septicaemia; rickettsial
fusion construct; PCR primer; ss.
         4B;
                                                                                                                                                      99CA-2281913
                                                                                                                                                                           99CA-2281913
                                                                                                                                                                                                                                         salmonis.
       35pp;
                                                                                         Kuzyk
        English
                                                                                          Æ,
                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                      an
                                                                                                                                                                                                                                                                                                      optimisation
                                                                                                                                                                                                                                                                                                    of OspA
                                                                                                                                                                                                                                                                                 rickettsial
                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                 pathogen;
                                                                                                                                                                                                                                                                        disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    405
```

```
RESULT 4
AAF86252
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to a method for the protection against infection of a poikliothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals particularly poikliothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                     WPI; 2001-316844/34
                                                                                                                                                                         Kay WW,
                                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                          17-SEP-1999;
                                                                                                                                                                                                                                                                              17-MAR-2001
                                                                                                                                                                                                                                                                                                   CA2281913-A1
                                                                                                                                                                                                                                                                                                                       Piscirickettsia
                                                                                                                                                                                                                                                                                                                                           vaccine; O
SRS; 17E2;
                                                                                                                                                                                                                                                                                                                                                              Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen;
                                                                                                                                                                                                                                                                                                                                                                                  PCR primer #2 used in cloning an optimisation
                                                                                                                                                                                                                                                                                                                                                                                                        11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                            AAF86252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                             (KUZY/)
                                                                                                                                                                                                      (BURI/)
                                                                                                                                                                                                                 (KAYW/) KAY W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        268 GCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 al Similarity
118; Conserv
                                                                                                                                                                                             KUZYK M
                                                                                                                                                                                                       BURIAN J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                        Burian
                                                                                                                                                                                                                                                                                                                                                     OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                            fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B₽;
                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                 Σ
                                                                                                                                                                                                                                                                                                                                                     salmonid rickettsial septicaemia;
                                                                                                                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                          99CA-2281913
                                                                                                                                                                        Ţ,
                                                                                                                                                                                                                                                                                                                       salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                           construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;
                                                                                                                                                                         Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32
                                                                                                                                                                         ΜA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                            PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 118;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                          primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1e-51;
                                                                                                                                                                                                                                                                                                                                            SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          other;
                                                                                                                                                                                                                                                                                                                                                                                 of OspA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                     rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         animals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tion of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present

animals,

Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -

Example

3; Fig 4B; 35pp; English.

SSSSS

sequence represents a PCR primer used in the P. salmonis OspA gene. The OspA gene

Sequence 110 BP;

13 A; 28 C; 45 G; 100.0%; 21.5%;

24 T; 0 other;

the cloning and optimisation is used in the method of the

of

20 DЬ δ

53 TGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGGCCACCGGTGCGGTTGTGG 112

60

0

Matches 104; Query Match

Jocal

Similarity

Conservative

0;

Mismatches

Score 104; DB 22; Pred. No. 2.2e-44;

Length 110;

```
Query Match
Best Local Similarity
                                                   This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting fragment of salmonis. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other rickettsial pathogen sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                             Sequence 102 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                        Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                       WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                               (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                              17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                    CA2281913-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial pathogen; SRS; 17E2; fusion construct; PCR primer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCR primer #5 used in cloning an optimisation of OspA gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAF86255 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Burian J,
                                                                                                                                                                                                                                                                                                                     KUZYK M A.
                                     14 A; 23 C; 30 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                 99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                             99CA-2281913
        21.1%;
100.0%;
                                                                                                                                                                                                                                                                                           Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         102
Score 102; DB 22;
Pred. No. 2.5e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                     35 T;
                                0 other;
       Length 102;
```

Q DЬ

218 TGGACCAGCAGGATA

CGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCA 79

0,

Qy

```
Query Match
Best Local Similarity
"""+ches 75; Conserve
                                                                                               This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a particularly polkilothermic fish, against the bacterial pathogen animals. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other rickettsial spathogen sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis Osph gene. The Osph gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
AAF86253
158 CGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCA 217
                                                                                    Sequence 94 BP; 18 A; 20 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                               Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                      Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the Ospa protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                 WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                   17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                     (KAYW/) KAY W W.
(BURI/) BURIAN J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                             17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Poikilothermic fish; piscirickettsia salmonis; rickettsial vaccine; Ospa; salmonid rickettsial septicaemia; rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCR primer #3 used in cloning an optimisation of OspA gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF86253 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTACCAGCGTTACAACAACAAGAACGCGGTCAGCAGTACTGCCGCGAATTTCAGCAG 393
                                                                                                                                                                                                                                                                                                                                           KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTACCAGCGTTACAACAAACAGGAACGCCGTCAGCAGTACTGCCGCGAATTTCAGCAG
                                                                                                                                                                                                                                                                                                                      Burian J,
                                              15.5%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913.
                                                                                                                                                                                                                                                                                                                  Kuzyk MA;
                                             0;
                                                     Score 75;
Pred. No.
                                                                                35 G; 21 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94
                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCR primer; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                    DB 22;
3.4e-29
                                                                             0 other;
                                                 .4e-29;
                                                      Length 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

В

08

TGGACCAGCAGGATA

94

```
RESULT 8
AAF86256/C
ID AAF86256 standard; DNA; 110
XX
AC AAF86256;
                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 7
AAF86251
                                                                                                            δÃ
                                                                                                                                                                  õ
                                                                                         밁
                                                                                                                                                                                             Query Match
Best Local S
Matches 74
                                                                                                                                                                                                                                                                             salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
                                                                                                                                                                                                                                                                                                                                                                                      This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kay ww,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia
                                                                                                                                                                                                                                                Sequence 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCR primer #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAF86251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF86251 standard; DNA; 111
                                                                                                                                                                                                                                                                                                                                                                                                                              Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (KAYW/) KAY W W.
(BURI/) BURIAN J
                                                                                                                                           38
                                                                                                                  61
                                                                                         86
                                                                                                                                                                   1 ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTTCCTGGTGGGTTGC
                                                                                        ATGCGTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BURIAN J.
KUZYK M A.
                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             3; Fig 4B; 35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burian J,
                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                              BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     salmonis
                                                                                                                                                                                                                                              16
                                                                                                                  74
                                                                                                                                                                                                                                              A; 32 C;
                                                                                                                                                                                                         15.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cloning
                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                                                       Score 74;
Fred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            вр
                                                                                                                                                                                              0;
                                                                                                                                                                                                                                              30 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               an
                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               optimisation
                                                                                                                                                                                                                                              33 T; 0 other;
                                                                                                                                                                                              1.1e-28;
hes 0;
                                                                                                                                                                                                                        DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                      Length 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OspA
                                                                                                                                                                                              Indels
                                                                                                                                                                                             0;
                                                                                                                                                                                           Gaps
                                                                                                                                            97
                                                                                                                                                                     60
                                                                                                                                                                                              0;
```

```
RESULT 9
ABL02577
ID ABL0
XX
AC ABL0
XX
DT 26-M
XX
DT Dros
XX
DROS
KW Dros
KW Dros
KW Dhax
XX
XX
PN WO20
XX
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                           This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kay ww,
                                          Drosophila melanogaster
                                                                     pharmaceutical;
                                                                                     Drosophila;
                                                                                                                                                                        ABL02577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Piscirickettsia
                                                                                                              Drosophila melanogaster expressed polynucleotide SEQ ID NO
                                                                                                                                            26-MAR-2002
                                                                                                                                                                                                   ABL02577 standard; cDNA; 3833
                                                                                                                                                                                                                                                                                                                                                                                                                  invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                    444 TCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA 483
                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                        TCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-316844/34
                                                                                                                                                                                                                                                                                                                              ch 8.3%;
l Similarity 100.0%;
40; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KAY W W.
BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burian J,
                                                                                    developmental biology; cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                      ВP;
                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           used in cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99CA-2281913
                                                                     gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          salmonis.
                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                    A; 34 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsial septicaemia; ruct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                              Score 40; DB; Pred. No. 7.3
                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                    27 G;
                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           an optimisation
                                                                                                                                                                                                                                                                                                                                                                                    32 T; 0 other;
                                                                                                                                                                                                                                                                                                                                               DB 22;
7.3e-1
                                                                                                                                                                                                                                                                                                                                           .3e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of.
                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                       Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OspA
                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                               Gaps
```

0

23-MAR-2001; 27-SEP-2001.

2001WO-US09231.

```
В
                                                                                                                                                                                                                                                                                                                                                                                                         21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
                                                                                  26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                     26-JUL-2001
                                                                                                                     WO200153312-A1
                                                                                                                                              Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance; peripheral nervous system; neuropathy; central nervous system; cance; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                 Human polynucleotide SEQ ID NO 1357.
                                                                                                                                                                                                                                            22-OCT-2001
                                                                                                                                                                                                                                                                        AAI59154 standard; cDNA; 2562 BP
                                                                                                                                                                                                                                                                                                                                 1428
                                                                                                                                                                                                                                                                                                                                        159 GATGGCCATCGGCGGTGCGG 178
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3833
                                                                                                                                                                                                                                                                                                                                                                                                                                         useful in developmental biology and in elucidating cell-cell interactions in higher eukaryotes for the development in the invent insecticides, therapeutics and pharmaceutical drugs. The invent discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA The sequences (ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                 The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention is
                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 2213; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                      GATGGCCATCGGCGGTGCGG 1447
                                                                                                                                                                                                                                                                                                                                                                 Similarity
20; Conserv
                      2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001-656860/75.
                                                                            2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JC,
                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                    BP; 1094 A; 1030 C; 858 G; 851 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               £
                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PWD,
                                                                                                                                                                                                                                                                                                                                                     Score 20; DB 23;
Pred. No. 2.2;
0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EW
                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                           gene therapy; cancer;
ervous system; CNS;
                                                                                                                                                                                                                                                                                                                                                                 Length 3833;
                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                             WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                             0,
В
                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                      1197
```

```
CC The invention relates to human nucleic acids (AAI57798-AAI61369) and CC the encoded polypeptides (AAM38642-AAM42213) with nootropic, CC impunosuppressant and cytostatic activity. The polynucleotides are useful CC of the invention may be used to treat diseases of the peripheral nervous cC localised neuropathies and central nervous system diseases, such as CC Alzheimer's, Parkinson's disease, Huntington's disease, such as CC lateral sclerosis, and Shy-Drager Syndrome, Other uses include the activity, chamotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, CC assays for receptor activity, arthritis and inflammation, leukaemias and CC c.N.S disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
Matches 1
                 Eisenberg D,
                                                                (REGC ) UNIV
                                                                                                        01-FEB-2000;
                                                                                                                                  12-NOV-1999;
12-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                     13-NOV-2000; 2000WO-US31152.
                                                                                                                                                                                                                                                   17-MAY-2001
                                                                                                                                                                                                                                                                                              WO200135317
                                                                                                                                                                                                                                                                                                                          Mycobacterium tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                   Drug target;
                                                                                                                                                                                                                                                                                                                                                                                     Mycobacterium tuberculosis potential drug target gene SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH52010 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH52010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2562 BP; 524 A; 794 C; 791 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259 AAAGTGAAAGCCGGCCAGG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 1357; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel nucleic acids and polypeptides, useful such as central nervous system injuries .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-SEP-2000;
19-OCT-2000;
29-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang
Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGTGAAAGCCGGCCAGG 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
19; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QA,
                                                     CALIFORNIA.
          Rotstein SH,
                                                                                                 2000US-0179531
                                                                                                                                                                                                                                                                                                                                                                                growth;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang Z,
Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                     99US-0165086
99US-0165124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ilarity 100.0%; process of the conservative of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                                                                                                                                                                                                                                                            organism viability; characterisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Asundi V, Che
Wehrman T, X:
Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for this patent did not form part of the printed
Marcotte EM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 19; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chen R, Ma Y, Xu C, Xue AJ, R, Drmanac RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 450 T; 3 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for treating disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2562;
                                                                                                                                                                                                                                                                                                                                                 ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ren F, ;
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

```
RESULT 1
AAT66951
     ACC X PART OF A CAR A CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        represent DNA encoding proteins AAG81096 - AAG81241, Mycobacterium tuberculosis proteins which are potential drug targets. The DNA and protein sequences are used to illustrate the method of the invention. The method involves providing an unknown nucleotide or polypeptide sequences, and comparing it to a number of sequences along with at least one algorithm capable of analysing a functional relationship between nucleotide and polypeptide sequences. The method is useful for characterising the function of nucleic acids and polypeptides that may be useful as a target for a drug or essential for the growth or viability of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Asialoglycoprotein receptor L-H2; autoantibody; diagnosis; liver; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAT66951 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Identifying nucleotide or polypeptide sequence for use as drug involves providing algorithm that analyzes a functional relation between nucleotide or polypeptide sequences, and comparing the
Asialoglycoprotein receptor H1 and L-H2 soluble comprise extracellular domains, optionally also
                                                                                                                                                                                                                                                                                                                                   20-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                     14-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                 EP773289-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Asialoglycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAT66951;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polypeptide sequence that may be a drug tare or viability of an organism. Polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention relates to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 91; 207pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-329193/34.
P-PSDB; AAG81159.
                                                                                                                                                                                                                               (TOFU ) TONEN CORP
                                                                                                                                                                             Hasegawa A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355 CAGGAACGCCGTCAGCAG 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75 CAGGAACGCCGTCAGCAG
                                                                              1997-261316/24.
DB; AAW15246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                             Kiyosawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP;
                                                                                                                                                                                                                                                                                 95JP-0212118
                                                                                                                                                                                                                                                                                                                                   96EP-0113349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 191..1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                receptor L-H2 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA; 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               that may be a drug target,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; 338
                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58
                                                                                                                                                                             Ohue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; 341 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΒP
                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGPR; autoimmune hepatitis;
                                                                                                                                                                                Tanida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for identifying a nucleotide
drug target, or essential for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DΒ
                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tifying a nucleotide or growth sequences AAH51947 - AAH52092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1029;
derivatives - with cytoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               relationship
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
AAS59780/c
ID AAS59780 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ДD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone for AGPR L-H2 was isolated from human liver cDNA by PCR amplification (see AAT66956-61). Subregions coding for the extracellular domain, optionally also with the cytoplasmic domain, can be amplified by PCR (see AAT66966-69), cloned into appropriate vectors and used for large-scale prodn. of AGPR derivatives (see AAW165251-52), free of contaminating liver antigens, in bacterial (pref. E. coli) or animal (pref. mammalian) host cells. Such AGPR (L-H2 derivatives can be used in a claimed method for detecting or measuring anti-AGPR antibody. AGPR H12 cDNA has also been cloned (see AAT66950).
                                                                                                                                                                                                                         21-APR-2000; 2000US-199047P
02-JUN-2000; 2000US-208841P
07-JUL-2000; 2000US-216747P
                                                                                                                                                                                                                                                                                                                                                                                                  uveitis; endophthalmitis; bone; joint; central ner
inflammatory lesion; acne vulgaris; enzyme linked
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This cDNA clone codes for human asialoglycoprotein receptor (ACL-12 (AAW15246), a membrane protein expressed specifically by hepatocytes. The appearance of autoantibodies against AGPR caused as an indicator for autoimmune hepatitis (AIH). The cDNA
                                                                                       Propionibacterium acnes polypeptides and nucleic acids useful vaccinating against and diagnosing infections, especially usef
                                                                                                                                                       Skeiky YAW, Pers
L'maisonneuve J,
                                                                                                                                                                                                                                                                                                         01-NOV-2001
                                                                                                                                                                                                                                                                                                                                  WO200181581-A2
                                                                                                                                                                                                                                                                                                                                                             Propionibacterium
                                                                                                                                                                                                                                                                                                                                                                                      dermatological; osteopathic;
                                                                                                                                                                                                                                                                                                                                                                                                                              SAPHO syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Propionibacterium acnes immunogenic protein encoding DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAS59780;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1300 BP; 302 A; 395 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 2; Page 35-34; 40pp; English
                                                   Claim
                                                                           treating acne vulgaris
                                                                                                                                                                                                                                                                             20-APR-2001; 2001WO-US12865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domains, useful for autoimmune hepatitis diagnosis
                                                                                                                                                                                                (CORI-) CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 445 CAGCCGGATGGCCGCTGG 462
                                                                                                                                2001-616774/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCCGGATGGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                  SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                      Persing DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              synovitis;
                                                  No 275;
                                                                                                                                                                                                                                                                                                                                                              acnes.
                                                                                                                                                          Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA; 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.7%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         979
                                                                                                                                                          Ķ
                                                1069pp;
                                                                                                                                                       Mitcham JL, Wang
, Jen S, Carter
                                                                                                                                                                                                                                                                                                                                                                                                                             acne; pustulosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                      neuroprotectant; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВP
                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              350 G;
                                                                                                                                                                      Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               253 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                          Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                             hypertosis; osteomyelitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                  nervous system;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1300;
                                                                                                                                                                      Bhatia
                                                                                                                                                                                                                                                                                                                                                                                                    immunosorbent assay;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       #275.
                                                                                          useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AGPR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         be
                                                                                          for
```

0

Sequences AAS59506-AAS59804 represent DNA molecules encoding Propionibacterium acnes immunogenic polypeptides. The proteins associated DNA sequences are used in the treatment, prevention

and

their

```
RESULT 14
AAS84339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     555555555555555555555555<del>x</del>∝
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CC SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and CC SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and CC osteomyeiltis), uveitis and endophthalmitis. P. acnes is also involved CC in infections of bone, joints and the central nervous system, however it sparticularly involved in the inflammatory lesions associated with acne CC vulgaris. A method for detecting the presence or absence of P. acnes in a CC the proteins of the invention and determining the amount of bound protein CC in the sample. The polypeptides may be used as antigens in the production CC distribution of the carnes proteins. These antibodies can be CC therefore treat P. acnes infections. The antibodies and the reduction CC diagnostic agents for determining P. acnes presence, for example, by CC polypeptides shown in ANG67123-ANG67136 and ANG67975-ANG67978.

CC specification, but was obtained in electronic format directly from WIPO
          The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                       Claim 1;
                                                                                                                         New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity
                                                                                                                                                                                                         P-PSDB;
                                                                                                                                                                                                                                                 Drmanac
                                                                                                                                                                                                                                                                                                       31-MAR-2000;
23-AUG-2000;
                                                                                                                                                                                                                                                                           (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                            30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                                                                          WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA encoding novel human diagnostic protein #20143.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAS84339 standard; cDNA; 3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              163 GCCATCGGCGGTGCGGTT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1356 BP;
                                                                                                                                                                                                                    2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCATCGGCGGTGCGGTT 409
                                                                                                                                                                                                        ABG20152.
                                                                                         SEQ ID No 20143; 103pp; English.
                                                                                                                                                                                                                                                 RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                              Liu C,
                                                                                                                                                                                                                                                                                                    2000US-0540217.
2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267 A; 395 C; 429 G; 264 T; 1
                                                                                                                                                                                                                                             Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 23;
24;
as expressed sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .°
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
_{0}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAV04634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
Claim 54; Fig 3A-C; 151pp; English.
                             DNA encoding G-beta-gamma regulated phosphatidyl-inositol-3' kinase, pl01 and p120 subunits - useful for diagnosis, drug screening, clinical trial monitoring and treatment of inflammatory disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                      P-PSDB;
                                                                                                                                                                                                                                                  XXNO (-XXNO)
                                                                                                                                                                                                                                                                                        27-JUN-1996;
                                                                                                                                                                                                                                                                                                                                  26-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                             31-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                    W09749818-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G-beta-gamma regulated phosphatidylinositol-3' kinase; pig; phosphoinositide 30H-kinase; PI3K; signal transduction; phosphatidylinositol (3,4,5)-triphosphate; G-protein; receptransgenic animal; knockout animal; inflammation; arthritis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           septic shock; adult respiratory distress syndrome; pneumonia;
asthma; allergy; reperfusion injury; atherosclerosis; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alzheimer's disease; cancer; antisense; ribozyme; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapy; drug screening;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Porcine phosphoinositide 30H-kinase p120 subunit cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (II) (II) is useful for generating antibodies against it, detecting or a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful in medical disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and diagnostic coding sequences. AAS4197-AAS94564 represent novel human Note: The sequence data for this patent dia not appear in the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the printed at the wine intermit has a content of the wine wine with the wine wine with the w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAV04634 standard; cDNA; 3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3684 BP; 851 A; 981 C; 1107 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617 TGCAGGGCAGCTCTCTGA 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for identifying expressed genes. (1) is useful to restore normal activity of (II) or to treat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14 TGCAGGGCAGCTCTCTGA 31
                                                                                                                                                         1998-077181/07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    scrofa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                      AAW23948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                               PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                  Hawkins
                                                                                                                                                                                                                                                                                      96US-0672211
                                                                                                                                                                                                                                                                                                                             97WO-US11219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers 89..3397
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.7%;
                                                                                                                                                                                                  PT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ss.
                                                                                                                                                                                           Stephens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3684;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in gene therapy techniques disease states involving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,:
```

```
CC AAW23948) of plug G-protein regulated phosphatidylinositol-3' kinase, CC AAW23948) of plug G-protein regulated phosphatidylinositol-3' kinase, CC AAW23948) of plug G-protein regulated phosphatidylinositol-3' kinase, CC ah tried the protein-linked receptors. This novel protein, which CC also contains a regulatory subunit, plul (see AAV04633), is found in CC cells of haematopoietic origin and is involved in immune system CC probe (see AAV99713) based on an isolated pl20 cDNA was obtained from a CC probe (see AAV99713) based on an isolated pl20 rutyptic peptide. The CC invention encompasses ply and human plul and pl20 nucleotides, host cell expression systems, plul and pl20 proteins (see CC to these proteins, and transgenic animals and knockout animals. CC compounds which are useful for treating inflammatory response CC disorders can be identified by screening assays using a G protein cativated Pl20, subunit, especially by disrupting the interaction between the CC plul subunit, especially by disrupting the interaction between the CC plul and pl20 subunits) can be used to treat arthritis, septic CC shock, adult respiratory distress syndrome (ARDS), pneumonia, at stima, allergies, reperfusion injury, atherosclerosis, cancer and CC alzheimer's disease. The nucleic acids and their products can also be used for diagnosis, drug screening and clinical trial monitoring CC of inflammatory diseases.

Sequence 3808 Bp; 1010 A; 965 C; 953 G; 880 T; 0 other;

Ouery Match

Best Local Similarity 100.08; Pred. No. 24;
```

Query Match
3.7%; Score 18; DB 19; Length 3808;
Best Local Similarity 100.0%; Pred. No. 24;
Matches 18; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 411 TCAGAAACAGGAAATCTA 428

Search completed: October 27, 2002, 20:42:30 Job time : 130.349 secs

B

THIS PAGE BLANK (USPTO)

```
Post-processing: Listing first 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM nucleic - nucleic search, using sw model
             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                 Pred. No.
            Score
                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                            No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-677-374-3
483
1 atgcgtggttqcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      October 27, 2002, 18:35:09 ; Search time 934.579 Seconds (without alignments)
10815.053 Million cell update
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OLIGO_NUC Gapop 60.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1797656 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                atgcgtggttgcctgcaggg.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyright
                                                                                                                                                                                                                                                                                                             gb_pr:*
gb_ro:*
gb_sts:*
gb_sy:*
                                                                                                                                                                                                                                                                                                                                                     gb_ov:*
gb_pat:*
gb_ph:*
                                                                                                  em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                         gb_ba:*
                                                                                                                                                                      em_or: *
em_ov: *
em_pat: *
em_ph: *
em_pl: *
em_ro: *
                                                                                                                                                                                                                                          em_in:*
                                                                                                                                          em_un:*
em_vi:*
                                                                                                                                                                                                                                                             em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                            4; wo_q£
                                                                                                                                                                                                                                                                                  em_ba:*
                                                                                                                                                              em_sts:*
                                                                                                                                                                                                                                  em_om:*
            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 (c) 1993 - 2002 Compus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapext 60
            DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10463268293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                         summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Compugen Ltd
            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cell updates/sec
            JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                               RESULT 1
HJRNA1956/c
                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                    l (bases 1 to 589)
Blattner,F.R. and Kadereit,J.W.
Blattner,F.R. and Kadereit,J.W.
Morphological evolution and ecological diversification of the forest-dwelling poppies (Papaveraceae: Chelidonioideae) as ded from a molecular phylogeny of the ITS region Plant Syst. Evol. 219, 181-197 (1999)
2 (bases 1 to 589)
                                                                                                 Hylomecon japonica.
Hylomecon japonica
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; Ranunculales;
Papayeraceae; Hylomecon.
Blattner,F.R.
Direct Submission
Submitted (02-OCT-1997) Blattner F.R.,
                                                                                                                                                            AJ001956.1 GI:3392901 5.8S rRNA gene; internal transcribed spacer;
                                                                                                                                                                                 Hylomecon japonica 5.8S
AJ001956
                                                                                                                                                                                                                                                                                   13624
103608
222605
286485
291136
702
705
                                                                                                                                                                                                                                                                                   779
175144
610
616
619
643
                                                                                                                                                                                                                                                                                                                         AGHRGBEHA
MIIRGBEHA
KGIRGBEHA
KGIRGBEHA
KGIRGBEHA
AF427126
MCU69708
AF386497
AF386499
AF386500
AF386499
AF386500
AF3864930
AF3864930
AF3864930
AF3864930
AF3864930
AF3864930
AF3628990
AF2628990
AF2628990
AF2628990
AF2628990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HJRNA1956
CMRNA1959
CMRNA1960
AF169233
AE005332
AE005325
AE005325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AP002555
AP002557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AE006459
AL139161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AP002556
                                                                                                                                                                                           589
rRNA
                                                                                                                                                                                                                                                      ALIGNMENTS
                                                                                                                                                                                           bp
gene.
   Dept.
  of Taxonomy, Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AJ001956 Hylomecon
AJ001959 Chelidoni
AJ001950 Chelidoni
AJ001960 Chelidoni
AJ001960 Chelidoni
AF169233 Zizania t
AE005332 Escherich
AE005320 Escherich
AE005290 Escherich
AE005441 Escherich
AE006459 Escherich
AE006459 Escherich
AL139161 Human DNA
AL139161 Human DNA
AP002555 Escherich
AP002557 Escherich
AP002557 Escherich
AP002557 Escherich
AP002556 Escherich
AP002556 Escherich
L13954 Agoseris he
L13955 Microseris
L20484 Krigia bifl
                                                                                                                                                                                                                                                                                                                        U69707 Microseris
U69704 Microseris
AF386493 Agoseris
U69706 Microseris
AF262890 Lepanthes
AF262891 Lepanthes
AF262891 Lepanthes
AF262891 Lepanthes
AF262891 Lepanthes
                                                                                                                                                                                                                                                                                                                                                                                                                                                               L13957 Lactuca sat
AF422126 Microseris
U69708 Microseris
AF386496 Microseri
AF386497 Microseri
AF386498 Microseri
AF386500 Microseri
AF386500 Microseri
                                                                                                                                                                                                                                                                                                                                                                                                      U69709 Microseris
U69703 Microseris
U69705 Microseris
AF386495 Uropappus
                                                                                                                                                                                                                                                                                                                                                                                                                                             AF386502 Microseri
AF386503 Microseri
                                                                                                                                                                                                     PLN 23-MAR-2000
                                                                                                                                                                                                                                                                                  Triguera
) Lawsonia
/ Delarbrea
| Milleria
                                                              as deduced
```

FEATURES

for Plant Genetics and Crop Plant Research, Gatersleben, $\ensuremath{\mathsf{GERMANY}}$

D-06466,

source

rRNA

```
Query Match
Best Local Similarity 100.0%; p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AJ001959.1 GI:3393038
5.8S ribosomal RNA; 5.8S
ITS1, ITS2
Chelidonium majus.
Chelidonium majus
                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (02-0CT-1997) Blattner F.R., Dept.
for Plant Genetics and Crop Plant Research,
                                                                                                                                                                                                                                                                                                                                                                                           Blattner F.R. and Kadereit, J.W.
Morphological evolution and ecological diversification of the forest-dwelling poppies (Papaveraceae: Chelidonioideae) as deduced from a molecular phylogeny of the ITS region
Plant Syst. Evol. 219, 181-197 (1999)
Chases 1 to 594)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledons; Ranunculales; Papaveraceae; Chelidonium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CMRNA1959 594 bp
Chelidonium majus 5.8s rRNA gene
AJ001959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
22; Conserv
                                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.6%; Sc
conservative 0;
                                                                                                        392. .594
/note="internal transcribed spacer
168 c 173 g 130 t
                                                                                                                                                          /gene="5.8S rRNA"
392. .594
                                                                                                                                                                                  /gene="5.8s rRNA"
/product="5.8s ribosomal RNA"
230. .391
                                                                                                                                                                                                                          /note="internal transcribed spacer 1"
                                                                                                                                                                                                                                                            /sub_species="majus"
/db_xref="taxon:71251"
                                                                                                                                                                                                                                                                                        /organism="Chelidonium majus"
/strain="Mainz"
                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  388. .589
/note="internal transcribed spacer
169 c 166 g 129 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="5.8S rRNA"
388. .589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="5.8s rRNA"
/product="5.8s ribosomal RNA"
226. .387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="internal transcribed spacer 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Hylomecon japonica"
/db_xref="taxon:72187"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                    ; Score 22; DB
%; Pred. No. 0.4
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5.8s rRNA gene; internal transcribed spacer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 22;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                               DB 8;
                                                                  0.41;
                                                                                                                                                                                                                                                                                                                                        F.R., Dept. of Taxonomy, Institute
Research, Gatersleben, D-06466,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 8;
0.41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                    0;
                                                                            Length 594;
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                ,,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLN 23-MAR-2000
                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                   REFERENCE
AUTHORS
TITLE
                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                      RESULT 4
CMRNA1960/c
                                                                                                                                                                                  DEFINITION
ACCESSION
                                                                                                                                                          KEYWORDS
                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                              Locus
                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CMRNA1958/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Locus
                                                                                                                                                                                                                                                                                436 GCGTGCCCTCAGCCGGATGGCC 457
                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rRNA
                                                                                                                                                                                                                                                                             375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGTGCCCTCAGCCGGATGGCC
Chelidonium majus.
Chelidonium majus.
Chelidonium majus
Eukaryota; Viridiplantae; Streptophyta; Embryo
Spermatophyta; Magnoliophyta; eudicotyledons;
Papaveraceae; Chelidonium.
                                                                                                                               AJ001960.1 GI:3393039
5.8S ribosomal RNA; 5.8S rRNA gene; internal transcribed spacer;
ITS1; ITS2.
                                                                                                                                                                              Chelidonium majus 5.8s rRNA gene.
                                                                                                                                                                                                          CMRNA1960
                                                                                                                                                                                                                                                                                                                               Similarity
22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Blattner, F.R.
Blattner, F.R.
Direct Submission
Submitted (02-OCT-1997) Blattner F.R.,
Submitted (79-OCT-1997) Blattner F.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blattner,F.R. and Kadereit,J.W. Morphological evolution and ecological diversification of the forest-dwelling poppies (Papaveraceae: Chelidonioideae) as deduced from a molecular phylogeny of the ITS region Plant Syst. Evol. 219, 181-197 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chelidonium majus.
Chelidonium majus.
Chelidonium majus
Ekkaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; Ranunculales;
Papaveraceae; Chelidonium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AJ001958.1 GI:3393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CMRNA1958
Chelidonium majus 5.8s
AJ001958
                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                              392. .596
/note="internal transcribed spacer
169 c 171 g 132 t
                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="5.8S rRNA"
392. .596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="internal transcribed spacer 230. .391
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="5.8s rRNA"
/product="5.8s ribosomal RNA
230. .391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Chelidonium majus"
/sub_species="asiaticum Hara"
/db_xref="taxon:71251"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                     4.6%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:3393037
mal RNA; 5.8S
                                                                                                                                                                                                                                                                     354
                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                  Score 22;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352
                                                                                                                                                                                              596 bp
                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        596 bp
rRNA gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rRNA gene; internal transcribed spacer;
                                                                                                                                                                                                                                                                                                                                 0.41;
                                                                                                                                                                                                                                                                                                                                              DB 8;
                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F.R., Dept. of Taxonomy, Institute Research, Gatersleben, D-06466,
                                                             Embryophyta; Tracheophyta;
edons; Ranunculales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                           Length 596;
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                    PLN 23-MAR-2000
                of
                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLN
                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-MAR-2000
                                                                                                                                                                                                                                                                                                         0,
```

JOURNAL REFERENCE AUTHORS TITLE

JOURNAL

REFERENCE AUTHORS TITLE

SOURCE ORGANISM KEYWORDS ACCESSION DEFINITION CMRNA1959/c

VERSION

DЪ δõ

BASE COUNT ORIGIN

Query Match Best Local

Matches

RESULT

FEATURES

source

BASE COUNT ORIGIN

misc_feature

gene

misc_feature

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
AF169233/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                           rRNA
                 TRNA
                                                           misc_RNA
                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                373 GCGTGCCCTCAGCCGGATGGCC 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436 GCGTGCCCTCAGCCGGATGGCC 457
                                                                                                                                                                                                                                                                                                                                                                                                                                       648 bp DNA linear PLN 21-NOV-19: Zizania texana 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1, 5.8S ribosomal RNA gene and internal transcribed spacer 2, complete sequence; and 25S ribosomal RNA gene, partial sequence.

AF169233
                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Zizania.

1 (bases 1 to 648)

Kahn,A.B. and Horne,F.

The Molecular Phylogeny of Zizania (Wild Rice) and Related Grasses Based on nrDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    forest-dwelling poppies (Papaveraceae: Chelidonioideae) as deduced from a molecular phylogeny of the ITS region Plant Syst. Evol. 219, 181-197 (1999)
                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                Zizania texana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GERMANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (02-OCT-1997) Blattner F.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                Submitted (14-JUL-1999) Biology,
                                                                                                                                                                                                                            2 (bases 1 to 648)
Kahn, A.B. and Horne, F.
                                                                                                                                                                                                                                                                                                                                                                                                Zizania texana.
                                                                                                                                                                                                                                                                                                                                                                                                                              AF169233.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for Plant Genetics and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 596)
                                                                                                                                                                                     Marcos,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="5.8S rRNA"
391. .596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="internal transcribed spacer 172 c 171 g 131 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="5.8s rRNA"
/product="5.8s ribosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /strain="Neustadt/W."
/sub_species="majus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
 /product="5.8S ribosomal RNA"
                             /product="internal transcribed spacer
                                               /note="ITS1"
                                                                           /product-"18S
                                                                                                       /country="USA"
                                                                                                                       /organism="Zizania texana"
/db_xref="taxon:34180"
                                                                                                                                                                  s, TX 78666, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:71251"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Chelidonium"
                                                                                                                                                                                                                                                                                                                                                                                                                            GI:6456574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .390
                 .404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "internal transcribed spacer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 22;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) Blattner F.R., Dept. of Taxonomy, Institute Crop Plant Research, Gatersleben, D-06466,
                                                                           ribosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               majus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 8;
0.41;
                                                                                                                                                                                                 Southwest Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                 State University,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLN 21-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
AE005332
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                    CDS
                                                                                                                                                                                gene
                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 GCGTGCCCTCAGCCGGATGGCC 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 436 GCGTGCCCTCAGCCGGATGGCC 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genome sequence of Nature 409 (6819), 21074935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perna, N.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia coli 0157:H7
Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AE005332 AE005174
AE005332.1 GI:12514830.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AE005332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 7286) rna, N.T., Plunkett, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                    /gene="Z1901"
316..642
                                                                                                                                                                                   homologous to E. 316. .642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405. .606
/note="ITS2"
                                                                                                       Related
                                                                                                                                                                                                                                                                                        /organism="Escherichia
/strain="EDL933"
                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. .7286
translation="MTALLTLEEIKAHLRYDHDADDEMLMDKVRQATAVLLAYIQGSR/
                                                                        /codon_start=
                                                                                                                       function-"orf;
                                                                                                                                    /gene="Z1901"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .>648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
/product="internal transcribed 607. .>648
                                                                                                                                   /product="25S ribosomal RNA"
211 c 192 g 109 t
                                                                                                 Score 22;
Pred. No.
7286 bp
7 EDL933
                                                                                          Mismatches
genome,
                                                                                                DB 8;
0.41;
                                                                                         0;
contig
                                                                                                                                                               spacer
                                                                                                          Length 648
linear
ntig 2 (
                                                                                          Indels
                                                                                                                                                                 2
 of
                                                                                        0;
                                                                                        Gaps
                                                                                         0
```

Rose,D.J., Mayhew,G.F., Evans,P.S., Gregor,J., Kirkpatrick,H.A., Posfal,G., Hackett,J., Klink,S., Boutin,A., Shao,Y., Miller,L., Grotbeck,B.J., Davis,N.W., Lim,A., Dimalanta,E., Potamousis,K., Apodaca,J., Anantharaman,T.S., Lin,J., Yen,G., Schwartz,D.C., Welch,R.A. and Blattner,F.R. Bacteria; Proteobacteria; enterohaemorrhagic Escherichia coli O157:H7
529-533 (2001) III, Burland, V., Mau, B., EDL933. gamma subdivision; Enterobacteriaceae; Glasner, J.D., BCT 21-MAR-2001 3, section 1 of

2 (bases 1 to 7286)
2 (bases 1 to 7286)
Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpattick, H.A., Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Grotbeck, E.J., Davis, N.W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anantharaman, T.S., Lin, J., Yen, G., Schwartz, D.C., Welch, R.A. and Blattner, F.R. Submitted (22-OCT-2000) Laboratory of Genetics, University Wisconsin, 445 Henry Mall, Madison, WI 53706, USA of.

coli 0157:H7 EDL933"

/note="0-island #52; Region of the EDL933 chromosome homologous to E. coli K-12 MG1655" /note="enterohemorrhagic" /db_xref="taxon:155864" /serotype="0157:H7"

not

Other or unknown (Phage ဝူ Prophage

/trans1_table=11
/product="unknown protein
/protein_id="AAG55994.1"
/db_xref="GI:12514831" /note="No significant matches" encoded уd prophage CP-933X"

gene	gene CDS	gene CDS CDS	gene CDS
1 to :4 of 1 for 1	"unknown protein encoded by prophid="AAG55997.1" "GI:12514834" "ION="MYLSRESCEGMESGVHIRGVNPDTGNS RPHPFVRPAFDVRSEQAAQVAIARMNRAIDEVLI 87 906" "orf; Other or unknown (phago and	phage phage phage phage phage prophag prophag identi acteria	DKVISEDGELIPGEALTRWKGAAMRLTGMLYRNPDLAEREDLVQGELPFSVSVLIYDL 6521002 /gene="21902" 6521002 /gene="21902" /function="putative enzyme; DNA packaging, phage assembly (Phage or Prophage points). DNA packaging, phage assembly (Phage or Prophage points).
	gene CDS	gene CDS Gene	CDS

```
AMADDGKLTADKVVPALISQLGILRDEYAAMPETVSSSITKVENAFMAWVGGANEASG
                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Z1912"
2978. 3259
/gene="Z1912"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Residues 1 to 92 of 93 are 60.86 pct identical to residues 133 to 224 of 224 from GenPept 118 : 91|6901601|gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=11
/product="unknown protein encoded by prophage CP-933X"
/protein_id="AAG56000.1"
/db_xref="G::1251837"
/translation="MARDLKTIALIARLSGFRHKTVKVPEWRNVSVVLREPSAEAWYLW
2978. 3259
2978. 3259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Related) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Residues 1 to 77 of 80 are 62.33 pct identical to residues 1 to 76 of 224 from GenPept 118 : gi|6901601|gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="21908"
/function="putative structure; Structural component (Phage / Function="putative structure; Structural component (Phage or Prophage Related)"
/function="putative structure; Structural component (Phage / Note="Residues 25 to 258 of 262 are 67.09 pct identical to residues 1 to 234 of 234 from GenPept 118;
gi[6901588]gb|AAF31091.1|AF069529_4 (AF069529) major tail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2578. .2820
/gene="Z1910"
/function="orf; Other or unknown (Phage or Prophage
Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Z1910"
2578. .2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /Product="putative tail component of prophage CP-933X"
/Protein_id="AAG55999.1"
/BOUNTEEL GI:12514836"
/translation="MTFSFFSTKDIPRRVRVFLLSGGRMSALVERSQLTQVMISSAPA
/LYANGLYLRLDCTIKEVQFTAGOKODIDVTTLCSTEQENINGLGASSEISMSGNF
/LNOAQNALRDAYDNOTYAFKVQFPSGKGFKFLAVENOHTMSGTNGVVAATESLRL
KGKPVSYVPLAFVKNPEKTLTVNTGALLTMSYSVNGGTPFYKYAWKKDGQPVEGQTT
DTFSKANAQSGDKGAYTCMVMDSAEQPQSITSDACTVTVNGAGG"
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
AE005325
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                  CDS
SdO
                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATCCGGACACCGGTAACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAATCCGGACACCGGTAACAGC 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 10029)

Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpattick, H.A., Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Grotbeck, E.J., Davis, N.W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anantharaman, T.S., Lin, J., Yen, G., Schwartz, D.C., Melch, R.A. and Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A., Posfal, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Grotbeck, E.J., Davis, N.W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anantharaman, T.S., Lin, J., Yen, G., Schwartz, D.C., Welch, R.A. and Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli O157:H7 EDL9 of 155.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome sequence of enterohaemorrhagic Nature 409 (6819), 529-533 (2001) 21074935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (22-OCT-2000) Laboratory of Genetics, University Wisconsin, 445 Henry Mall, Madison, WI 53706, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Escherichia coli 0157:H7 EDL933.
Escherichia coli 0157:H7 EDL933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE005325 AE005174
AE005325.1 GI:12514723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 10029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                               /note="Residues 1 to 67 of 67 are 58.20 pct identical to residues 48 to 12 of 112 from GenPept 118 : git6901597[gb]AAF31100.11 (AF069529) putative head-tail adaptor [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                  /gene="
                                                    /translation="MQSGAEMAQAEIRIWVRGQSGREITAASRLHVLSGPWRDHVLNV
VGVPVPDATGGRLEILCRLGGEK"
                                                                                      /product="unknown protein
/protein_id="AAG55908.1"
/db_xref="GI:12514724"
                                                                                                                                                                                                                                                            /function="orf; Related)"
                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Escherichia coli
/strain="EDL933"
                                                                                                                                              /transl_table=11
                                                                                                                                                                /codon_start=
                                                                                                                                                                                                                                                                                                                                                                        homologous to
                                                                                                                                                                                                                                                                                                                                                                        /note="O-island #50; Region of the EDL933 chromosome homologous to E. coli K-12 MG1655"
                                                                                                                                                                                                                                                                                                                                                                                                                          /note="enterohemorrhagic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:155864"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /serotype="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
 /gene="Z1809"
309. .755
                                                                                                                                                                                                                                                                                               /gene="Z1808"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.6%;
100.0%;
                                                                                                                                                                                                                                                                                                                                    Z1808"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 2; Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0029 bp
EDL933
                                                                                                                                                                                                                                                                              Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA line genome, contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
0.47;
                                                                                                                               encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 7286;
                                                                                                                           ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                           prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BCT 21-MAR-2001
3, section 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                             CP-933N"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                                                                                                            not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
```

```
/gene="z1809"
/function="orf; '
Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene=":
752. .1(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or Prophage Related)"
/note="Residues 24 to 257 of 261 are 67.09 pct
to residues 1 to 234 of 234 from GenPept 118 :
gi|6901588|gb|AAF31091.1|AF069529_4 (AF069529)
subunit [Bacteriophage HK97]"
/protein_id="AAG55912.1"
/db_xref="GI:12514728"
/db_xref="GI:12514728"
/translation="MHRDSERSRRIRGWVIMKKDLKTLALARLSGFRHKTVKVPEWRN
/translation="MHRDSERSRRIRGWVIMKKDLKTRRUEADVTLFCDVLCDTDLQR
VSVVLKEPSAEAWYLWGEVLNGGEDDDTLSVVAKTRRUEADVTLFCDVLCDTDLQR
VFTPDDREQVLAVYGPVHARLLRQALELIADAESARKK"
                                                                                                                                                                                                                                                            HK97
                                                                                                                                                                                                                                                                        /function="putative factor; Structural component (Phage of Prophage Related)"
Prophage Related)"
/note="Residues 17 to 140 of 140 are 62.90 pct identical to residues 1 to 123 of 224 from GenPept 118:
gii6901601|gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AETMDKAEYLRLDCTIKEVQFTAGQKQDIDVTTLCSTEQENINGLCASSEISMSGNFY
LNQAQNALRDAYDNDALYAFKVLFPSGKGFKFLAEVRQHTWSSGTNGVVAATFSLRLK
GKPVSFVVPLAFVKNPDKTLTVNTGALLTMSVSVNGGTPPYKHAWKKDGQPVEGQTTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="putative tail component encoded by CP-933N"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transi_table=11
/product="unknown protein encoded by prophage CP-933N"
/protein_id="AAS59910.1"
/protein_id="AAS59910.1"
/db_xref="GI:12514726"
/translation="MTEADLYPYLAHLAGGQVYPYVVPLLDGRPSVALPWVVFSLISS
VSADVMGGQAESSVSVQIDVYAGTVTQARQIRQDAREAIMLLAPGSVSEMQDYIPENR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Residues 1 to 148 of 148 are 75.16 pct identical residues 1 to 149 of 149 from GenPept 118 : gi_[501598]gb|AAF31101.1| (AF069529) Gp10 [Bacteriophage
                                                                                                                                             /product--putative prophage CP-933N"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Z1812"
1845. .2267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TFSKPGAQSADAGKYTCVVTDSAEKAQSVTSVECTVTVSAAAG* 1845. . 2267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1093. .1878
/gene="Z1811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="Z1811"
1093. .1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1093.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYRATLEFQVTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HK97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gi|6901599|gb|AAF31102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         residues 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Related)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WRFVEMGTVNMPPHPFVRPAFDVRSEQAAQVAIARMNRAIDEVLRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MIETLLDFSGLEDISRDLQLLSGAENNRVLREATRAGANVLKEE
VVSRAPVRRGKLRRNVVVLSRRSRDGGMESGVHIRGVNPDTGNSDNTMKADNPRNAFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="unknown protein
/protein_id="AAG55909.1"
/db_xref="GI:12514725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAG55911.1"
/db_xref="GI:12514727"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Residues 1 to 113 of 114 are 49.12 pct identical to
residues 1 to 114 of 115 from GenPept 118 :
gi|6901599|gb|AAF31102.1| (AF069529) Gp11 [Bacteriophage
                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Z1812"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /function="orf;
Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="21810"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                          /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             translation="MTFSFFYKTHTPPRAGFLLSGGRMSALYERSQLTQVMISSAPAT/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /function="putative structure; Structural component (Phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Z1810"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Other or unknown
                                                                                                                                                                       tail assembly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or unknown (Phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoded by prophage CP-933N"
                                                                                                                                                                       chaperone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AF069529) major tail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pct identical to
                                                                                                                                                                       encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      identical
```

```
Matches
291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                 Similarity 100.
22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="putative tail component L homolog encoded by /problage CP-933N" /protein_id="AnG55915.1" /protein_id="AnG55915.1" /db_xref="GI:12514731" /db_xref="GI:
                                                                                                                                                                                                                                            4911. .5069
/gene="21816"
/function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="Z1815"
4038. 4734
                                                                                                                                                                                                                                                                                                                                                                                                     /gene="Z1816"
4911. .5069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANFGGFLSINKLSQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALPPGRIMLANTCMWDYRGDECGYHGPAVADEFDNPTTDIRKDRCSKCMRGCEMRGMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-Residues 1 to 232 of 232 are 76.72 pct identical residues 1 to 232 of 232 from GenPept 118 : [bacteriophage lambda]" (J02459) L (tail component;232)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /Product="unknown protein encoded by prophage CP-933N"
/Product="na655914.1"
/Product="n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /function="putative structure; Structural component (Phage
or Prophage Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4038 .4736
/gene="Z1815"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Residues 1 to 393 of 397 are 69.36 pct identical to residues 1 to 394 of 1089 from GenPept 118 : 9116901589|gb|AAF31092_1|AF069529_5 (AF069529) tail length
                                                                                                          100.0%; P1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tape measure protein [Bacteriophage HK97] tail length /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="unknown protein encoded by prophage CP-933N"
/protein_id="AAG55913.1"
/db_xref="G1:12514729"
/translation="MRLAIRLGRTLSELRHSLSASEAMMWMEFDRVSPLGDERGDIRN
AQIVKAVFGAQGMNVALKDAMLCWGEDEDKPEVDPFAALEDALSLAAMS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="Z1814"
2624. .3817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /function="orf; Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Z1814"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Residues 1 to 90 of 93 are 61.11 pct identical to residues 133 to 222 of 224 from GenPept 118 : 9i|6901601|9b|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Z1813"
2291. .2572
/gene="Z1813"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /function="orf; Related)"
                                                                                                                                                    Score 22; DB 1;
Pred. No. 0.47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 2572
                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or unknown (Phage or Prophage
                                                                                                               0,
                                                                                                                                                                           Length 10029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pct identical to
                                                                                            0;
                                                                                   Gaps
                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                       CDS
                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   551
```

Ş

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
AE005290
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A., Posfai, G., Hackett, J., Klink, S., Boutlin, A., Shao, Y., Miller, L., Grotbeck, E.J., Davis, N.W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anantharaman, T.S., Lin, A., Dimalanta, E., Potamousis, K., Welch, R.A. and Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (22-OCT-2000) Laboratory of Genetics, University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l (bases 1 to 11809)
Perna, N. T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J. D., Rose, D. J., Mayhew, G. F., Evans, P. S., Gregor, J., Kirkpatrick, H. A., Grotbeck, E. J., Davis, N. W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anautharaman, T. S., Lin, A., Dimalanta, E., Potamousis, K., Welch, R. A. and Blattner, F. R.
Welch, R. A. and Blattner, F. R.
Genome sequence of enterohaemorrhagic Escherichia coli 0157:H7
Nature 409 (6819), 529-533 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATCCGGACACCGGTAACAGC 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 11809)
Perna, N.T., Plunkett,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia coli 0157:H7 EDL933.
Escherichia coli 0157:H7 EDL933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AE005290 AE005174
AE005290.1 GI:12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli 0157:H7 of 155.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE005290
                                                                            /gene="Z1368"
309. .755
       /function="orf; Related)"
                                                                                                                           /protein_id="AAG55500.1"
/db_xref="GI:12514211"
/translation="MQSGAEMAQAEIRIWVRGQSGREITAASRLHVLSGPWRDRILNV
                                                                                                                                                                                                                                     /product="unknown protein CP-933M"
                                                 'gene="Z1368"
                                                                                                                                                                                                                                                                                           /note-"residues 1 to 67 of 67 are 56.71 pct identical to residues 48 to 112 of 112 from GenPept 118 : gil6901597|gb|AAF31100.1| (AF069529) putative head-tail
                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                        /function="orf; Other or unknown (Phage or Prophage Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note-"Cryptic prophage CP-933M; includes one copy of the 60 bp direct repeat that flanks the prophage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Z1367"
109. .312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="0-island #44; Region of the EDL933 chromosome not
homologous to E. coli K-12 MG1655"
                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="Z1367"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="enterohemorrhagic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:155864"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Escherichia coli Ö157:H7 EDL933"
/strain="EDL933"
/serotype="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:12514210
    Other or unknown (Phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11809 bp
H7 EDL933
                                                                                                                                                                                                                                       encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genome,
                                                                                                                                                                                                                             by cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear BCT 21-MAR-2001 contig 1 of 3, section 114
or Prophage
                                                                                                                                                                                                                           prophage
```

```
/transi_table=11
/product="putative tail assembly chaperone encoded by cryptic prophage CP-933M"
/protein_id="AAG55504.1"
/db_xref="GI:12314215"
/tanslation="MAKDIKTIALARLSGERHKTVKVPEWRNVSVVLREPSAEAWYLW
/translation="MAKDIKTIALARLSGERHKTVKVPEWRNVSVVLREPSAEAWYLW
OEVLNGDGEDDDTLSVVAKTERNLEADVTLFCDVLCDTDLQRVFAPDDREQVLAVYGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transi_table=11
/product="putative tail component encoded by cryptic prophage CP-933M"
/protein_id="aac55503.1"
/db_xref="GI:12514214"
/tansiation="MNFFNRTHNPPRAGFLLSGGRMSALYERSOLTQVMISSAPATAE TMEKREYLRLOCTIEVOTTACQKODIDVTTLCSTEQENINGLGASSEISMSGNFYLN QAQNALRDAYDNDTVYAFKVQFPSGKGFKFLAEVRQHTWSSGTNGVVAATFSLRLKGK PSYVYPLAFVKULDKTLTVETGCALLTMSVSYNGGTPPYKHWKKDGQPVEGQTTDTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Residues 22 to 255 of 259 are 66.66 pct identical to residues 1 to 234 of 234 from GenPept 118 : g1|6901588|gb|AAF31091.1|AF069529_4 (AF069529) major tail subunit [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Z1370"
/function="putative structure; Structural component (Phage or Prophage Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="Z1370"
1093. .1872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="mTEADLYPHLAHLAGGQVYPYVVPLLDGRPSVALPWVVFSLISS VSADVMGGQAESSVSVQIBVYAGTVTQARQIRQDAREXIMLLAPGSVSEMQDYIPENR CYRATLEFQYTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="unknown protein CP-933M"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Residues 1 to 148 of 148 are 75.16 residues 1 to 149 of 149 from GenPept 118 gi[6901598|gb|AAF31101.1| (AF069529) Gp10
                                                                                                                                                                                                                                                        /note="Residues 1 to 124 of 124 are 62.90 pct identical to residues 1 to 123 of 224 from GenPept 118 : gi_[6901601|gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Z1371"
1878. .2257
                                                                                                                                                                                                                                                                                                                                                                                                                                               1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1093.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="unknown CP-933M"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HK97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="Z1369"
752. .1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAG55501.1"
/db_xref="GI:12514212"
/translation="MIETLLDFSGLEDISRDLQLLSGAENNRVLREATRAGANVLKEE
/translation="MIETLLDFSGLEDISRDLQLLSGAENNRVLREATRAGANVLKEE
VVSRAPVRRGKLRRNVVVLSRRSRDGGMESGVHIRGVNPDTGNSDNTMKADNPRNAFY
                                                                                                                                                                                                                                                                                                                           /function="putative factor; Structural component (Phage or
Prophage Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKANTQSGDKGAYTCEVTDSAEQPQSITSDACTVTVNGAGG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Residues 1 to 113 of 114 are 48.24 residues 1 to 114 of 115 from GenPept 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /function="orf; Other or unknown (Phage or Prophage Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WRFVEMGTVNMPPHPFVRPAFDVRSEQAAQVAIARMNRAIDEVLRR" 752. .1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="AAG55502.1"
/db_xref="GI:12514213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gi|6901599|gb|AAF31102.1| (AF069529) Gp11 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                            /gene="Z1371"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="Z1369"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pct identical to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pct identical to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    prophage
                                           RESULT 9
AE005441/c
                                                                                                                                                                                       QΥ
                                                                                                                                              В
    DEFINITION
                          LOCUS
                                                                                                                                                                                                                                Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                              551
                                                                                                                                                                 291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                              TAATCCGGACACCGGTAACAGC 572
  AE005441
Escherichia
                                                                                                                                                                                                                                  Similarity 100.0%; 22; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="Z1373"
2828. 3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAG55506.1"
/db_xref="GI:12514217"
/db_xref="GI:12514217"
/translation="MMGAFXCAFATGHLISLADEWSSVNXRLKQAXQSSDEFSSXQKV
/translation="MMGAFXCAFATGHLISLADEWSSVNXRLKQAXQSSDEFSSXQKV
LMDISQRTGXAFSDNXALFXRSAASMREYGYSADDVLKVTEAISTGLKISGASTAEAG
SVITQFSQALAQGVLRGEEFNSVNESGDRIVRALAAGMGVAKDLKAMADDGQLTADK
VVPALISQLEVLRDEYAAMPETVSDGITKVENAFMAWVGGANEASGVTKTLSGVLNGV
AGQIDNVATARGGTGCRRGCPVLMQYGLRSDVCHGRTCDGCT"
3477. 3812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="z1372"
2276. .2557
/gene="z1372"
/function="orf; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Residues 14 to 107 of 111 are 35.41 pct identical to residues 300 to 394 of 1089 from GenPept 118 : gi|6901589|gb|AAF31092.1|AF069529_5 (AF069529) tail length tape measure protein [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Z1374"
3477. .3812
                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="GI:12514218"
/translation="mlpdrlimmqqpvgalvavgvaryfgnmasgamsataglvtaar
NEVALAEAQFRGTQIATARARXAVYRAQQAVAAARGTEMQIAAEARLAATQERLNRNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="unknown
CP-933M"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="unknown
CP-933M"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Residues 1 to 241 of 260 are 79.66 pct identical to residues 71 to 311 of 1089 from GenPept 118: gi 65901589 jgb|Apr31092.11,AP069529_5 (AP069529) tail length tape measure protein [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein_id="AAG55505.1"
/db_xref="G1:12514216"
/tanslation="MRLARIGRTLSELRHSLSASEAMMWMEFDRVSDLGDERGDIRN
AQIVKAVFGAQGMNVALKDAMLCWGEDEDKPEVDPXAALEDALSLAAMS"
                                                                                                                                                                                                                                                                                                                         4033. .4464
/gene="Z1375"
                                                                                                                                                                                                                                                                                                                                                                       AARTAAPQG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /function="orf;
Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gi|6901601|gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Residues 1 to 90 of 93 are 60.00 pct identical to residues 133 to 222 of 224 from GenPept 118 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="21374"
/function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAG55507.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="Z1373"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
  13505 bp
coli 0157:H7 EDL933
                                                                                                                                                                                                                                                                                4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3610
                                                                                                                                                                                                                                s; Score 22; DB; Pred. No. 0.4
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
genome,
                                                                                                                                                                                                                                                   DB 1;
0.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     encoded
                                                                                                                                                                                                                                     0,
  contig
                                                                                                                                                                                                                                                                              Length 11809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         by cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bу
  linear
ntig 3 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cryptic
  BCT
                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prophage
  21-MAR-2001
section 60
                                                                                                                                                                                                                                     Gaps
```

SdC gene CDS gene

gene

CDS gene

0;

```
TITLE
JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                           :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (22-OCT-2000) Laboratory of Genetics, University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A., Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Apodaca, J., Anantharaman, T.S., Lin, J., Dimalanta, E., Potamousis, K., Welch, R.A. and Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perna, N.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A., Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Apodaca, J., Anantharaman, T.S., Lin, J., Yen, G., Schwartz, D.C., Welch, R.A. and Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome sequence of enterohaemorrhagic Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1120655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perna, N.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia coli 0157:H7
Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AE005441.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 290.
AE005441 AE005174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 13505)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 13505)
              /translation="MATLRELIIKISANSQSFQSEIORASRMGSEYYRTLQNGGRQAA
AAAREQRRALAELNSQLTEIRGSAVGMAGAFAGAFASGHLISLADEWSSVNARLKQAS
                                                                                       /product="putative tail component of prophage CP-933V"/protein_id="AA657266.1"
/db_xref="GI:12516370"
                                                                                                                                                                                                                                                                             /function="putative structure; Structural component (Phage or Prophage Related)" (Phage Ito 962 of 969 are 53.92 pct identical to residues 1to 962 of 1089 from GenPept 118 (116901589) (APRO 1089) (A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(198...374)
/gene="Z3316"
complement(198...374)
/gene="Z3316"
                                                                                                                                                                                                                             /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(371. .3280)
/gene="Z3318"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product-"unknown protein encoded within prophage CP-933V"/protein_id="AAG57205_1"
/db_xref-"G1:12516369"
/translation='MMGSAGLVYSPVYHIAIQNDGXNGQIGFEAAGSLVQLIDQRVQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(371. .3280)
/gene="Z3318"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="No significant matches"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /Note="0-island #93; Region of the EDL933 chromosome not homologous to E. coli K-12 MG1655; Cryptic prophage CP-933V; includes one copy of the 21 bp direct repeat the Shiga-like toxin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="enterohemorrhagic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /serotype="0157:H7"
/db_xref="taxon:155864"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Escherichia coli O157:H7 EDL933"
/strain="EDL933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:12516368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EDL933
EDL933
                                                                                                                                                                                                                                                       [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      subdivision; Enterobacteriaceae;
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
```

QSSDEFASSQKVLMDISQRTGTAFSDNAALFARSAASMREYGYSAGDVLKVTEAISTG
LKISGASTABAGSVITQFSQALAGCYLRGEEFNSVNESGDRIVRALAACHGVARKDLK
VIKTLSGMLMGVAGOIDNVATAVGALLAGCYLRGEEFNSVNESGDRIVRALAACHGVARKDLK
VTKTLSGMLMGVAGOIDNVATAVGALLAGVARYFGNNASGAMSATAGILVTAARNEVA
LAEAQFRCTQIATARARAAVYRAQQAVAAARGTEMQIAABARLAATQELUTAARNEVA
AAQNALNSTTAVGSRLMKGALGILVGGVPGLVMLGAAAWYTLYQNGOQARESARQVALT
EDRRVALIRGTAAGASDNEGRTRAALTFQNRLIDAGAARWYTLYQNGOQARESARQVALT
EDRRVALLRQQAAEQNKVYGSMLVMNGQHTEEPNBLLGIGNELLQQQGCIVNVPLRCL
ATILDDKQQSALTKTERELALSRLKGEEKERARLGYAADDLGFYGDXYQEARGVYSINA
ELKTLTEIQKAELTSTEKELALSRLKGEEKERARLGYAADDLGFYGDXYQEARGVYSINA
ELKTLTEIQKQELLRNAALIDQKIBEDLGSSFSLLKNENAAARSNDAELLGYGGGE
YABSDXQRADHGVGELGFRGKSDOSFSRLLXGQKXQLALAGANQXYESBELKDQXXF
WRSWASSVLQEISKVLMNAALIDQXIBFOLGSOYOTGDISEDFYRQALAQNAQYLSEBELKDQXXF
WRSWASSVLQEISKVLMNAAINGMGRGFGGFLGSIGMUNITEMLNGNKVE
TSANILSAVSNSTUNDDTVFAFAKGAGI MCDACOFA YDDISMANGKGGVY TSANLSAYSNSIVDTPTYFAFAKGAGLMGEAGPEAIMPLTRAADGSLGXXRXWAY"
complement(3333. .3614)

complement(3333, .3614) /gene="Z3319"

/function="orf; Other or unknown (Phage or Prophage Related)"
Related)"
/note="Residues 1 to 90 of 93 are 61.11 pct identical to residues 133 to 222 of 224 from GenPept 118 gil69016011gb/AAF31104.11 (AF069529) Gp14 [Bacterlophage

/transl_table=11 /codon_start=1

/product="unknown protein encoded within prophage CP-933V"
/protein_id="AAG57207.1"
/db_xref="G1:12516371"
/translation="MRLARLGRTLSELRHSLSASEAMMWHEFDRVSPLGDERGDIRN
AQIVKAVFGAQGMNVALKDAMLCWGEDEDKPEVDPFAALEDALSLAAMS" complement(3638. /gene="Z3320"

complement(3638. .4012) /gene="23320"

'function="orf;

/note="Residues 1 to 124 of 124 are 62.90 pct identical to residues 1 to 123 of 224 from GenPept 118; gi[6901601|gb|AAF31104.1| (AF069529) Gpl4 [Bacteriophage Related)" Other or unknown (Phage or Prophage

/transl_table=11

/product="unknown protein /protein_id="AAG57208.1" /db_xref="GI:12516372" encoded within prophage CP-933 V^{π}

complement(4018. .4863) /gene="z3322" /translation="MAKDLKTLALARLSGERHXTVKVPEWRNVSVVLREPSAEAWYLW QEVLNGDGEDDDTLSVVAKTRRLEADVTLFCDVLCDTDLQRVFXPDDREQVLAVYGP

complement(4018. .4863) /gene="Z3322"

/function="putative structure; Structural component (Phage or Prophage Related)"
/note="Residues 44 to 277 of 281 are 67.52 pct identical to residues 1 to 234 of 234 from GenPept 118; gi | 6901588 | gb | AAF31091.1 | AF069529_4 (AF069529) major tail

/transl_table=11
/product="putative major
prophage CP-933V" tail subunit encoded within

/protein_id="AAG57209.1" /db_xref="GI:12516373"

/translation="MKCRTIFRKTAVTVQPWSFRSRCNFFNRTHNPPRAGFILSGGRM SALYERSQLTQVMISSAPATAETWEKAEYLRLDCTIKEVQFTAGOKODIDVTTLCSTE OENINGLGASSEISMSGNFYLNQAQNALRDAYDNDTYYAFKVQFPSGKGFKFLAEVRQ HTWSSCTNGYVAATFSLRLKGKPVSYVVPLAFVKNXXKTLTVNTGALLTMSVSVNGGT PPYKXAWKKDGQPVEGQTTDTFSKANXQSGDKGAYTCXVXDSAEQPQSITSDACTVTV

complement(4793. .5137)

```
RESULT 10
AE006459/c
LOCUS
                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                             β
                                                                            KEYWORDS
                                                                                                             VERSION
                                                                                                                                   ACCESSION
                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                             5338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                        291 TAATCCGGACACCGGTAACAGC
                                                                                                                                                                                                                                                                                                                                             TAATCCGGACACCGGTAACAGC
                                                                                                                                                      13624
Escherichia coli 0157:H7 EDL9
of 55
Escherichia coli 0157:H7 EDL933
Escherichia coli 0157:H7 EDL933
Bacteria; Proteobacteria; gamma
                                                                                                       AE006459 AE005174
AE006459.1 GI:13259579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(5134. .5580)
/gene="23325"
complement(5134. .5580)
/gene="23325"
/function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Residues 1 to 113 of 114 are 49.12 residues 1 to 114 of 115 from GenPept 118 g116901599|gb|AAF31102.1| (AF069529) Gp11 HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Residues 6 to 116 of 116 are 45.94 pct identical to residues 4 to 112 of 112 from GenPept 118 : gi|6901597|gb|AAF31100.1| (AF069529) putative head-tail adaptor [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement(5577. .5927)
/gene="z3326"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="mietlldfsgledisrdlQllsgaennrvlreatraganvlkee
vvsrapvrrgklrrnvvvlsrrsrdggmesgvhirgvnpdtgnsdntmkadnprnafy
wrfvemgtvnmpphpevrpafdvrseqaaqvaiarmnraidevlrr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Residues 1 to 148 of 148 are 75.16 pct identical to residues 1 to 149 of 149 from GenPept 118: gi[6901598|gb|AAF31101.1| (AF069529) Gp10 [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYRATLEFQVTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="unknown protein encoded /protein_id="AAG57210.1" /db_xref="GI:12516374"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="maisagrltqmisvlnpvltrnaagemteemvscgkihadirgr
SsrermQSGAEmaQAEIrimvrGQSGreitaAsrlhvLSGPwrdxxLnvvgxpvpDxt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(5577. .5927)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="unknown protein encoded within prophage CP-933V"
/protein_id="AAG57211.1"
/db_xref="GI:12516375"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(4793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="unknown protein encoded within prophage CP-933V"
/protein_id="AAG57212.1"
/db_xref="GI:12516376"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="23326"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MTEADLYPHLAHLAGGQYYPYVVPLLDGRPSVALPWVVFSLISS
VSADVMGGQAESSVSVQIDVYAGTVTQARQIRQDAREAIMLLAPGSVSEMQDYIPENR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Related)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="23323"
/function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="23323"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                       4.6%; UT
100.0%; Pr
100.0%; O;
                                                                                                                                                                                                                                                                                                                                             5317
                                                                                                                                                                                                                                                                                                                                                                                              312
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 22; DB; Pred. No. 0.4
0; Mismatches
                                                                                                                                                                                 3624 bp DNA EDL933 genome,
  gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .5137)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
0.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 13505;
                                                                                                                                                                                 linear BCT contig 2 of 3, s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  within prophage CP-933V"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pct identical to
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                    section
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perna, N. T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J. D., Rose, D. J., Mayhew, G. F., Evans, P. S., Gregor, J., Kirkpatrick, H. A. Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Grotbeck, E. J., Davis, N. W., Lim, A., Dimalanta, E., Potamousis, K., Apodaca, J., Anantharaman, T. S., Lin, J., Yen, G., Schwartz, D. C., Welch, R. A. and Blattner, F. R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genome sequence of enterohaemorrhagic Escherichia Nature 409 (6819), 529-533 (2001) 21074935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (12-FEB-2001) Laboratory of Genetics, Wisconsin - Madison, 445 Henry Mall, Madison, WI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plunkett,G. III.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 13624)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 13624)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /function="putative structure; Structural component (Phage or Prophage Related)"
/note="Residues 1 to 1076 of 1080 are 52.37 pct identical to residues 1 to 1079 of 1089 from Genpept121: gb|AAF31092.1|AF069529_5 (AF069529) tail length tape measure protein [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAK16950.1"
/db_xref="GI:1329580"
/db_xref="GI:1329580"
/translation="MafIRELIIKISANSQSFQSEIQRASRMGSEYYRTLQNGGRQAA
AAAREQRRALAELHSQLTEIRASAYGMTGAFAGAFATGHLISLADEWSSVNARLKQAS
QSSDEFASSQKYLMDISQRTGTAFSDNAALFARSAASWEEYGYSADDVLKVTEAISTG
LKISGASTAFAGASVITOFSQALAQGVLRGEEFNGSVNESGDFIVRALAAGMGVARKDLK
LKISGASTAFAGASVITOFSQALAQGVLRGEEFNGSVNESGDFIVRALAAGMGVARKDLK
AMADDGRITADKVVPALISQLGILRDEYAAMPETVSSSITKVENAFMAWGGANEASG
YTKTLSGMLNGVAGQIDNVATAVGALVAVGVARYFGNNASGAMSATAGLYTAARNEVA
                                                                                                                                                                                                                                                                                                                                                                                                                 VALIROQAAEONKVYOSMLYMNGOYTEFNRLLGLGNELLQQRGGLVNVPLRLPQATLD
DKQQSALTKTERELALSRLKGEEKERVRLGYAADDLGFYGDPYOEARORY I SNALEAW
RNNEYNKDFKSRGGKSETEKAEDSFSRLLKQQKEDLALAGQNTELAKLKYOTALGELAY
LSEIQKOELLRNAALIDQQKIREQLRYREETLKNDNVAARASNESELLGYGQGERARE
RMRELQQIRDSFROKDADLQSOYQTGDLSEDFYRQALAQNAQYLSERLKDQAVEYAES
DVQRADWQKGLQEGSGWYDDASQAFOLATEGISGMVNNITEMLNGDKYLEWSD
DVQRADWGKGLQEGFSWYDDNASOYAOLATEGISGMVNNITEMLNGDKYLEWSD
NSSVLQEISKVLMNAAIVNGIKTAANGMSGAGGFLGSIGDWLGGAVANAKGGYYTSAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LAEAQFRGTQIATARARAAYYRAQQAVAAARGTEMQIAAEARLAATQERLURRIIAARS
AAQNALASTTAWGSRLMSGALGLWGGVPGLVMLGAAAWTLYQAQEQARESARQYALT
IDELAHKTPSMSLPEAASDUEGEFRAALTEORNELDEDASRYKSLOEKIAGYQYVLAND
GWTTGDGFMINHLTSVKTYTEGLAQATEQLAYEQSRLAQMQEKAQSIQDYLAGLEDRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="putative tail component CP-933P"
                                                                                                                        /gene-"Z6035"
/function "putative factor; DNA packaging, phage assembly (Phage or Prophage Related)"
(Phage or Prophage Related)"
/note-"Residues 1 to 92 of 93 are 60.86 pct identical to residues 133 to 224 of 224 from Genpept121: gb|AAF31104.10 (AF069529) Gp14 [Bacteriophage HK97]"
                     /product="putative tail assembly protein of cryptic prophage CP-933P"
                                                                                                                                                                                                                                                                                      complement(3488. .3769)
                                                                                                                                                                                                                                                                                                                                       complement(3488. .3769)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(198. .3440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Z6034"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(198. .3440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /serotype="0157:H7"
/db_xref="taxon:155864"
/protein_id="AAK16951.1"
                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                            /gene="Z6035"
                                                                                                                                                                                                                                                                                                                                                                   YSPVYHIAIQNDGANGQIGPEAAGSLVQLIDQRVQAVMLSMRRDGGMLSG"
                                                                                                                                                                                                                                                                                                                                                                                              LSAYSNSIVDTPTYFAFAKGAGLMGEAGPEAIMPLTRAADGSLGVRAVGSMNGSAGLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="Z6034"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="enterohemorrhagic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="EDL933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Escherichia coli 0157:H7 EDL933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of cryptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kirkpatrick, H.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 University
I 53706-1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coli 0157:H7
                                                                                                                                                        gb|AAF31104.1|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
```

```
/function="putative structure; Structural component (Phage or Prophage Related)"
/note="Residues 1 to 148 of 148 are 75.16 pct identical to residues 1 to 149 from Genpept121: gb|AAF31101.1|
/AF069529) Gp10 [Bacteriophage HK97]"
                                                                 /product="putative structural component of cryptic prophage CP-933p"
                                                                                                                                                                                                                                                                              complement(5305. .5751)
                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                            /gene="Z6039" .5751)
                                                                                                                                                                                                                                                                                                                                               /translation="MTEADLYPHLAHLAGGQVYPYVVPLLDGRPSVALPWVVFSLISS CYRATLEFQVTV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(4964. .5308)
/gene="Z6038"
/gene="Z6038"
/gene="Z6038"
/gene="Z6038"
/function="putative structure; Structural component (Phage Prophage Related)"
/note="Residues 1 to 113 of 114 are 49.12 pct identical to (AF065929) Gpl1 (Bacteriophage HK97)"
                                                                                                                                                                                                                                                                    /gene="Z6039"
                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAK16954.1"
/db_xref="GI:13259584"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="putative structural component of cryptic
prophage CP-933p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Protein_id="AAK16953.1"
/db_xref="GI:13259583"
/translation="MTPSFFYKTHTPPRAGFILSGGRNSALYERSQLTQVMISSAPAT/translation="MTPSFFYKTHTPPRAGFILSGGRNSALYERSQLTQVMISSAPAT/translation="MTPSFFYKTHTPPRAGFILSGTEQENINGLGASSEISMSGRPYLAEVILDCTIKEVQFTAGQKQDIDVTTLCSTEQENINGLGASSEISMSGRPYLAVATAVANAVATFSLRIKGKPVAPATAVAVAATFSLRIKGKPVYPLAFYKNLDKTLTVNTGALLTMSVSANGGTPPYKYAWKKDGQPVDGQTTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TFSKPGAOSADAGKYTCVVTDSAEKAQSVTSVECTVTVSAAAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="putative structure; Structural component (Phage Or Prophage Related)" 257 of 261 are 68.37 pct identical to residues 1 to 257 of 261 are 68.37 pct identical gb|AAF31091.1|AF069529_4 (AF069529) major tail subunit /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="putative tail component of cryptic prophage CP-933p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement(4182. .4967)
/gene="Z6037"

complement(4182. .4967)
/gene="Z6037"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "CTAINS ATION - "MHRDSERSRRIRGWVIMKKDLKTLALARLSGFRHKTVKVPEWGN
VSVVLREPSABAWTIWQBVLNGDGEDDDTLSVVAKTRRNLEADVTLFCDVLCDTDLQR
VFTPDDREQVLAVVGPVHARLLRQALELIADAESARKK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /function="putative factor; DNA packaging, phage assembly (Phage or prophage Related)"
/note="Residues 17 to 140 of 140 are 62.90 pct identical to residues 1 to 123 of 224 from Genpept121:
gb|AAF31104.1| (AF069529) Gp14 [Bacteriophage HK97]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="putative tail assembly protein of cryptic prophage CP-933p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="AAK16952.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="GI:13259582"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(3793. .4215)
/gene="Z6036"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="G1:13259581"
/translation="mrlalrlogTLSELrHSLSASEAMMWHEEDRISPLGDERGDIRN
AQIVKAVECAQGMMVALKDAMLCWGEDEDKPEVDEPAALEDALSLAAQS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phage assembly
                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                             RESULT 11
AL139161
LOCUS
                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                               TITLE
JOURNAL
                                                                                                                                                                                                          ORGANISM
                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   5509 TAATCCGGACACCGGTAACAGC 5488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
Direct Submission
Submitted (04-AUG-2001) Sanger Centre, Hinxton, Cambridgeshire, CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone requests: Clonerequest@sanger.ac.uk
                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                         complete sequence.
AL139161
AL139161.8 GI:151
                                                                                                                                                                                                                                                  HTG
                                                                                                                                                                                                                                                                                                                     Human DNA sequence from
                                                                                                                                                                                                                           human .
                                                                                                                                                                                                                                                                                                                                                      AL139161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(6437. .9016)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="Z6042"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAK16957.1"
/db_xref="GI:13259587"
/translation="MTALLTLEEIKAHLRVDHDADDDMLMDKVRQATAVLLAYIQGSR
DKVIREDGELIPGEALTRMKGAAMRLTGMLYRNPDLAEREELIQGELPFSVSYLIYDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Residues 5 to 25 of 108 are 66.66 pct identical to residues 6 to 26 of 104 from Genpept121: psi/AAF27360.1/AF198256_14 (AF198256) unknown [Haemophilus influenzae]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="unknown protein
CP-933p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /Protein_id="AAK16956.1"
/db_xref="GI:13259586"
/translation="MSCGKIHADIRGRSSRERMQSGAEMAQAEIRIWVRGQSGREITA
ASRLHVLSGPWADRILNVVGLPVPDATGGRLEILCRLGGEK"
complement(6108...6434)
/gene="Z6041"
                                                                                                                                                                                                                                                           GI:15131780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="orf; Other or unknown (Phage or Prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(6108. .6434)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /function="putative structure; Structural component (Phage or Prophage Related)"

Or Prophage Related)"

/note="Residues 6 to 85 of 85 are 53.75 pct identical to residues 35 to 112 of 112 from Genpept121: gb|AAF31100.1|

(AF069529) putative head-tail adaptor [Bacteriophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="26041"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="putative
CP-933p"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /Protein_id="AAK16955.1"
/db_xref="GI:13259585"
/tanslation="MIEFILDESGLEDISRDLQLLSGAENNRYLREATRAGANVLKEE
VVSRAFVRRGKLRRNYVYLSRRSRDGGMESGYHIRGYNPDTGNSDNTMKADNPRNAFY
WRFVEMGTVNMPPHPFVRPAFPVRSEQAAQVAIARMNRAIDEVLRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(5748. .6005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="26040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Z6040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 22; DB 1; Pred. No. 0.48; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                             103608
                                                                                                                                                                                                                                                                                                03608 bp DNA linear PRI 04-AUG-2 clone RP5-940F7 on chromosome 1q42.2-43,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .9016)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              head-tail adaptor of cryptic prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            encoded by cryptic prophage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 13624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                          PRI 04-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

gene CDS

CDS

gene CDS

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                               repeat_region
                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                    repeat_region
                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest. The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em:, EMBL; Sw:, SWISSPROT; TT:, TREMBL; MP:, WORMPEP; Information on the WORMPEP database can be found at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                On Aug 9, 2001 this sequence version replaced gi:14787245. During sequence assembly data is compared from overlapping clones. Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with only a small overlap as described above.

This sequence was finished as follows unless otherwise noted: all
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            http://www.sanger.ac.uk/Projects/C_elegans/wormpep This sequence was generated from part of bacterial clone contigs of human chromosome 1, constructed by the Sanger Centre Chromosome 1 Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMPORTANT: This sequence is not the entire insert of clone RP5-940F7 It may be shorter because we sequence overlapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sections only once, except for a 100 base overlap. The true left end of clone RP4-764D2 is at 101609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.sanger.ac.uk/HGP/Chr1
trtp://www.sanger.ac.uk/HGP/Chr1
trtp://www.chorn.the library Reference
leter de Jong. For further details see
http://www.chorn.org/bacpac/home.htm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RP5-940F7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ECTOR: PCYPAC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Further information can be found at
                                                                                                                                                                                                                                    4714. .4753

/note="20 copies 2 mer ac 100% conserved"
4812. .4870

/note="MER4D repeat: matches 359. .417 of consensus"
4870. .5107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          right end of clone RP4-580N22 is at 2000 in
                                                                                                                                                                                                                                                                                                                                                                           /note="AluSc repeat: matches 5. 4574 . .4663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                      /note-"AluSx repeat: matches 6.
                                                                                                                                                                                                                                                                                                                                                    /note="MIR repeat: matches 161.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restriction digest data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001. .2044
/note="Single clone region. Assembly confirmed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1248. .3222
/note="L1PB2 repeat: matches 3614.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="L1PB2 repeat: matches 5574. .6155 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="AluSg/x repeat: matches 145. .295 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="RPCI-5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /map="q42.2-43"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="MER58B repeat: matches 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="AluSp repeat: matches 1. .313 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'clone="RP5-940F7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'Chromosome-"
'note="AluSx repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .103608
                                                                                                                                                                                                                    e="MER4D repeat: matches 9.
                                         copies 2 mer ac 84% conserved"
                                                                                    repeat: matches 2588.
                                                                                                                                  copies 2 mer ca 97% conserved"
                                                                                                                                                                                                                                                                                                                                                    .248 of consensus"
  .303 of consensus"
                                                                                                                                                                        .285 of
                                                                                                                                                                                                                    .234 of consensus
                                                                                    .2705 of
                                                                                                                                                                                                                                                                                                                                                                                               .298 of
                                                                                                                                                                                                                                                                                                                                                                                                                                        .341 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .5574 of consensus
                                                                                                                                                                        consensus t
                                                                                                                                                                                                                                                                                                                                                                                             consensus"
                                                                                    consensus'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in this sequence. in this sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
repeat_region
                                         repeat_region
                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                               repeat_region
                                                                             /note="Alusx re
27151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20033. .20154
/note="61 copies 2 mer ca 80% conserved" 21253 .2157
/note="Allub repeat: matches 1. 200 - 121740 .21793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="AluJo repeat: matches 11.
13542. .13637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8597.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19595. .19610
/note="L2 repeat: matches 2642.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="22 copies 2 mer ca 79% conserved"
17480. .17949
/note="MLT1B repeat; matches 1. .466 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15312. .15622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10847. .11024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10071.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7653. .7833
/note="MIR_repeat: matches 33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="L2 repeat: matches 2653. .2750 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19922.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19611.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="AluSx repeat: matches 1.
16455. .16515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="MIR repeat: matches 59, .229 of consensus"
                                                                                                                                                                                      /note="23_copies 2 mer tg 76% conserved"
                                                                                                                                                                                                                                                                                                                           /note="AluJo repeat:
                                                                                                                                                                                                                                                                                                                                                                        /note="AluSp repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                 /note="AluJo repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18444. .18636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="L2 repeat: matches 2647.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="AluJo/FRAM repeat: matches 147.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="AluJb repeat: matches 74.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="L1MC4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="25 copies 2 mer tg 100% conserved"
                                                                                                                                                                                                                                                                                 'note="MLT1B repeat: matches 1. .388 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             note-"Alusg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note="L2 repeat: matches 2638. .2688 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="AluSg repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="MIR repeat: matches 53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="50 copies 2 mer ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="AluJo repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note * "MIR repeat: matches 46. .143 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="AluY repeat: matches 1. .309 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'note="L2 repeat: matches 2606. .2733 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="MER5A repeat: matches 1. .189 of consensus"
                                                                                                                                                                                                                                      e="AluSp repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .17458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .14457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .18895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .12829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .18049
  12 repeat: matches 28872
                                                                                                                                                                                                                    26570
                                                                                                                                                    repeat:
                                                               repeat: matches 5199. .6329 of consensus"
                                                                                                         repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat: matches 1. .466 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat: matches 7162. .7974 of consensus"
                                                                                                                                                    matches 1.
                                                                                                                                                                                                                                                                                                                             matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               matches 1.
                                                                                                                                                                                                                                           matches 1.
                                                                                                                                                                                                                                                                                                                                                                           matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                    matches 1.
                                                                                                         matches 1.
                      2580. .2706 of consensus*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .193 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .208 of consensus"
                                                                                                                                                    .287 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2708 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .306 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .292 of consensus"
                                                                                                                                                                                                                                                                                                                             .294 of
                                                                                                                                                                                                                                                                                                                                                                           .305 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .308 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             .308 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2653 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .301 of consensus"
                                                                                                         .290 of consensus"
                                                                                                                                                                                                                                        .299 of
                                                                                                                                                                                                                                                                                                                                                                                                                    .295 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .304 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .300 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .286 of consensus"
                                                                                                                                                                                                                                                                                                                           consensus "
                                                                                                                                                                                                                                                                                                                                                                           consensus "
                                                                                                                                                                                                                                                                                                                                                                                                                 consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              consensus'
```

```
Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                              Complete nucleotide sequence of the prophage VT2-Sakai carrying the verotoxin 2 genes of the enterohemorrhagic Escherichia coll 0157:H7 derived from the Sakai outbreak Genes Genet. Syst. 74 (5), 227-239 (1999)
                                              Ohnishi,M., Murata.T., Nakayama,K., Kuhara,S., Hattori,M.,
Kurokawa,K., Yasunaga,T., Yokoyama,K., Makino,K., Shinagaw
                                                                                                                                                                                        Makino,K., Yokoyama,K., Kubota,Y., Yutsudo,C.H., Kimura,S., Kurokawa,K., Ishii,K., Hattori,M., Tatsuno,I., Abe,H., Iida, Yamamoto,K., Ohnishi,M., Hayashi,T., Yasunaga,T., Honda,T., Sasakawa,C. and Shinagawa,H.
                                                                                                                                                                                                                                                                                          Escherichia coli 0157:H7
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                  Escherichia coli 0157:H7 (strain:0157:H7, sub_strain:RIMD 0509952)
                                                                                                                                                                                                                                                                                                                                                                                                             AP002555.1 GI:13360886
                                                                                                                                                                                                                                                                                                                                                                                                                    AP002555
Escherichia coli 0157:H7 DNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="AluSg repeat: matches 1.
38658. .41845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36795.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="L1PBa repeat: matches -1518. .-1346 of consensus"
36795. .38360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="MER46A repeat: matches 196.
36626. .36797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="AluSq repeat: matches 1. .277 of consensus"
36585. .36625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note="AluSc repeat:
35906. 36181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="MIR repeat: matches 48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="AluJb repeat: matches 136. .312 of consensus"
34670. .34769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="AluSg1 repeat: matches 1.
33996. .34174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="AluJb repeat: matches 1. .136 of consensus"
33698. .33995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="AluSx repeat: matches 1. .301 of consensus"
33563. .33697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="MER50 repeat: matches 1. .711 of consensus"
33194. .33485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.68; 5c.
100.08; Pr
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="MITIC repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="MER30 repeat: matches 1.
29785. .30063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="AluJo repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="AluJo repeat: matches 85.
29508. .29715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .35112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat: matches 2361.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l repeat: matches 4493. .4721 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 22;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat: matches -184. .1384 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat: matches 4494. .4608 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      matches 1. .302 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 9;
0.53;
                                                                                                                                                                                                                                                                                                                                                                                                                                  genome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 103608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .302 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .243 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .2461 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .182 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .297 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .250 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .230 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .236 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .287 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                section 6/20
                                                                                                                                                                                                                         Kimura,S.,
be,H., Iida,T.,
                                                Shinagawa, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                          BCT 07-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (26 JUN-2000) Ken Kurokawa, Osaka University, Gen Information Research Center; 3-1, Yamadaoka, Suita, Osaka 5 Japan (E-mail:ken@gen-info.osaka-u.ac.jp, URL:http://www.gen-info.osaka-u.ac.jp/, Tel:81-6-6879-8365, Fax:81-6-6879-2047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ohnishi,M., Kurokawa,K., Makino,K., Yasunaga,T., Shinagawa,H. and
Hayashi,T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Complete genome sequence of enterohemorrhagic Escherichia coli
0157:H7 and genomic comparison with a laboratory strain K-12
DNA Res. 8 (1), 11-22 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hayashi,T., Makino,K., Ohnishi,M., Kurokawa,K., Ishii,K., Yokoyama,K., Han,C.-G., Ohtsubo,E., Nakayama,K., Murata,T., Tanaka,M., Tobe,T., Iida,T., Takami,H., Honda,T., Sasakawa,C., Ogasawara,N., Yasunaga,T., Kuhara,S., Shiba,T., Hattori,M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete nucleotide sequence of the prophage VT1-Sakai carrying the Shiga toxin 1 genes of the enterohemorrhagic Escherichia coli o157:H7 strain derived from the Sakai outbreak Gene 258 (1-2), 127-139 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yokoyama,K., Makino,K., Kubota,Y., Watanabe,M., Kimura,S.,
Yutsudo,C.H., Kurokawa,K., Ishii,K., Hattori,M., Abe,H., Iida,T.
Yamamoto,K., Hayashi,T., Yasunaga,T., Honda,T., Sasakawa,C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Comparative analysis of the whole set of rRNA operons between an enterohemorrhagic Escherichia coli o157:H7 Sakai strain and an Escherichia coli K-12 strain MG1655
Syst. Appl. Microbiol. 23 (3), 315-324 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hayashi, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 222605)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (sites)
/translation="mmkktptstkdslpnkemndlprlasavlplcsohpgocglepl
EKSLDAFAARYRLAEMSHTLDVQYYIWQDDMSGRLLFSALLAAAKRGVRVRLLLDDN
NTPGLDDILRLLDSHPRIEVRLENPESFRLLRPLGYITDFSRLNRRMHNKSFTVDGVV
                                                                    /evidence=not_experimental
/product="putative synthase"
/protein_id="BAB34847.1"
/db_xref="GI:13360888"
                                                                                                                                                     /gene="ECS1424"
/note="similar to YMDC_ECOLI gi|1787284 percent identity
99 in 493 aa (Conserved in E.coli K-12)"
                                                                                                                                              /transl_table=11
                                                                                                                                                                                                                                         /gene="ECs1424"
549. .2030
                                                                                                                                                                                                                                                                                549.
                                                                                                                                                                                                                                                                                  /translation="MKTRIHVVQGDITKLAVDVIVNAANPSLMGGGGVDGAIHRAAGP
ALLDACLKVRQQQGDCPTGHAVTTLAGDLPAKAVVHTVGPVWRGGEQNEDQLLQDAYL
NSLRLVAANSYTSVAFPAISTGVYGYPRAAAAEIAVKTVSEFITRHALPEQVYEVCYD
                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="putative polyprotein"
/protein_id="BAB34846.1"
/db_xref="GI:13360887"
                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="ECS1423"
/note="similar to B1045_ECOLI gi|1787283 percent identity
100 in 177 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="ECs1423"
74. .607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:83334"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /sub_strain="RIMD 0509952"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Escherichia coli
/strain="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O157:H7
```

Genome 565-0871,

MEDLINE REFERENCE

·: AUTHORS JOURNAL REFERENCE AUTHORS

TITLE

KEYWORDS SOURCE

ORGANISM

VERSION

ACCESSION

LOCUS DEFINITION AP002555

DЬ Ş

7141

Matches

CDS gene

```
/translation="MKPGATSYLPMNKTTEY IDAMPIAASEKAALPKTDIRAVHQALD
AEHRTWAREDDSPQGSVKARLEQAWPDSLADQQLIKDDEGRDDLKAMPEAKRSSMEPD
PWTTMPVGRTWAPLERGNUTPRYLABLTKEEDESEOKWRTVCTIRRYLLLITLAGUP
VATWYKKTILPYQGWALINDMOWGODLMVSFMQLLPYMLQTGILILFAVLFCWVSAG
FWTALMEFLQALISOSVAPALSOSVAPALSOLNEBHTALIMPICAEDVNRVFAGLRATW
ESVKATGNAKHFDYYLLDSSVAPALSOSVAPALSOLNEBHTALIMPICAEGUSTYRRERKVK
SGNIDDFCRRWGSQYSYMVVLDADSVWTGDCLCGLVRLMEANPNAGIIQSSPKASGMD
TLYARCQQFATRYGPLFTAGLHFWQLGESHYWGHNALIRVKEDEGGS
FAGSILSHDFVEAALMRAGGVWIAYDLPGSVEELPPNLLDELKRDRWRCHGNLMNE
RLFLYKGMHFVHRAVFLTGVMSYLSAPLWFMFLALSTALQVVHALTEPQYFLQPRQLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MMKMRWLSAAVMLTLYTSSSWAFSIDDVAKQAQSLAGKGYEAPK
SNLPSYBRDMKYADYQQIQFNHDKAYWNLKTPEKLEFYHQGMYEDTPVYXINEYYATA
VKRIKYSPDYFTFGDVQHDKDTYKDLGFAGFKVLYPINSKDKNDEIVSMLGASYFRU
GAGQVYGLSARGLAIDYALPSGEEFBRKEFWIERPKPTDKRLTIYALLDSPRAYGAY
GYVMPGRDTYVDVQSKIYLRDKYGKLGVAPLTSMFLFGPNQPSPANNYRPELHDSNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="periplasmic glucans biosynthesis protein"
/protein_id="BAB34849.1"
/db_xref="GI:13360890"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="ECs1426"
/note="similar to MDOG_ECOLI gi|1787286 percent identity
99 in 511 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="ECs1426"
3588. .5123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RNNLENSDKTNKKFSMVKLSVIFLCLGIGYAVIRRTIFIVYPPILSNGTFNFIVMQTL
FYLPFFILGALAFIFPHLKALFTTPSRGCTLAAALAFVAYLLNQRYGSGDAWMYETES
VITMVLGLWMVNVVFSFGHRLLNFQSARVTYFVNASLFIYLVHHPLTLFFGAYITPHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
/product="glucans biosynthesis protein"
/protein_id="BaB34848.1"
/db_xref="GI:13360889"
/translation="MNRVPAQREYFLDSIRAWLMLLGIPFHISLIYSSHTWHVNSAEP
SLWLTLFNDFIHSFRMQVFFVISGYFSYMLFLRYPLKKWWKVRVERVGIPMLTAIPLL
TLPQFIMLQYVKGKAESWPGLSLYDKYNTLAWELISHLWFLLYLVWMTTLCVWIFKRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(2038...3195)
/gene="ECs1425"
complement(2038...3195)
/gene="ECs1425"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GEGKAKRHSLLPQRLFDIMGSPSERIDIISSYFVPTRAGVAQLLRMVRKGVKIAILTN
SLAANDAVVHAGYARWRKKLLRYGVELLYELKFTREQSSTLHDGITGNSGASLHAKT
FSIDGKTVFTGSFNPDPRSTLLNTEMGFVIESETLAQLIDKRFIQSQYDAAMQLRLDR
WGRINWVDRHAKKEIVLKKEPATSFWKRVMVRLASILPVEWLL"
                                                                                                                                                                                                                                                                                                                                            /product="membrane glycosyltransferase"
/protein_id="BAB34850.1"
/db_xref="GI:13360891"
                           PVWPQWRPELAIALFASTMYLLFLPKLLSILLIWCKGTKEYGGFWRVTLSLLLEVLFS
VLLAPVRMLFHTVFVVSAFLGWEVVWNSPQRDDDSTSWGEAFKRHGSQLLLGLVWAVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LS I HAGNGEWIWRPLNNPKHLAVSSESMENPQGEGLLQRGRDESRFEDLDDRYDLRPS
AWYTPKGEWGKGSVELVE I PTNDETNDN I VAYWTPDQLPEPGKEMNFKYTITFSRDED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TSNWLGFLCGLIFVVGIAIILYEIHLRIPLLKFLFSGKPVVKRENDKAPAR" 3588. .5123
                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence-not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IGDNGETVESTVRYNPVTKGWRLVMRVKVKDAKKTTEMRAALVNADQTLSETWSYQLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KLHAPDNAWVQQTRRSTGDVKQSNLIRQPDGTIAFVVDFTGAEMKKLPEDTPVTAQTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="similar to Nidentity 99 in 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEGEMADRIELPASWHNDAMTHRYLRKMESSPFINHLVDGTLPLIWAKTRLLSDDPAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TLVGGRNIGDAYFGAGEEPLFSDLDVMAIGPVVEDVADDFARYWYCKSVSPLQQVLDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MDOC_ECOLI gi|3025226sp|P75920 percent
5 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AP002557/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 105175 TAATCCGGACACCGGTAACAGC 105196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
                           MEDLINE
                                                                                                                                                                                                                                                                      MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                 JOURNAL
                                                                                                                                  TITLE
                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                286485
Escherichia coli O157:H7 DNA,
APO02557 BA000007
                                                                          Comparative analysis of the whole set of rRNA operons between an enterohemorrhagic Escherichia coli 0157:H7 Sakai strain and an Escherichia coli K-12 strain MG1655
                                                                                                                                                                                                                                                                                                                                         Complete nucleotide sequence of the prophage VT2-Sakai carrying the verotoxin 2 genes of the enterohemorrhagic Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                Makino,K., Yokoyama,K., Kubota,Y., Yutsudo,C.H., Kimura,S.,
Kurokawa,K., Ishii,K., Hattori,M., Tatsuno,I., Abe,H., Iida
Yamamoto,K., Ohnishi,M., Hayashi,T., Yasunaga,T., Honda,T.,
Sasakawa,C. and Shinagawa,H.
                           Syst. Appl. 20557356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AP002557.1
                                                                                                                                                             Hayashi,T
                                                                                                                                                                                 Kurokawa, K.,
                                                                                                                                                                                                                  Ohnishi, M.,
                                                                                                                                                                                                                                                                                            Genes Genet.
                                                                                                                                                                                                                                                                                                                        derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                    20198780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                        (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (sites)
  (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="acidic protein MsyB"
/protein_id="BAB34852.1"
/protein_id="BAB34852.1"
/db_xref="a[1:13360893"
/translation="MMTMYATLEEAIDAAREEFLADNPGIDAEDANVQQFNAQKYVLQ
DGDIMMQVEFFADEGEEGECLPMLSGEAAQSVFDGDYDEIEIRQEMQEENTLHEWDEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to MSYB_ECOLI gi|1787289 percent identity
99 in 125 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(8060. .8437)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement(8060. .8437)
/gene="ECs1429"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AWRYVTILDLPFSLVFDTLLLPIDIHHGPYE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
/product="hypothetical protein"
/protein_ide"BaB4851.1"
/protein_ide"BaB4851.1"
/db_xref="GI:13360892"
/translation="MRLIVYSIMVILLSGCGSIISRTIPGQGHGNQYYPGVQWDVRDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="identical to YCEK_ECOLI gi|1787288 (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="ECs1428"
7832. .8059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TDRFLEMNRQRSLDDGFMHAVFNPSFNALATAMATARHRASKVLEIARDRHVEQALNE
TPEKLNRDRRLVLLSDPVTMARLHFRVWNSPERYSSWVSYYEGIKLNPLALRKPDAAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7832. .8059
/gene="ECs1428"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="ECs1429"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ′codon_start=1
                                                                                                                                                                              Murata,T., Nakayama,K., Kuhara,S., Hattori,M.,
, Yasunaga,T., Yokoyama,K., Makino,K., Shinagaw
                                                       Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:13361466
                                                                                                                                                                                                                                                                                            Syst.
                                                                                                                                                                                                                                                                                       the Sakai outbreak
Syst. 74 (5), 227-239 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 22;
Pred. No.
                                                    23 (3), 315-324 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (strain:0157:H7, sub_strain:RIMD 0509952)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

Length 222605;

0

Gaps

0

linear

BCT 07-MAR-2001

section 8/20

Shinagawa, H. and

Iida, T.,

CDS

gene

gene CDS

AUTHORS

```
JOURNAL
MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                      ٤
                                                                                                   CDS
                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26.JUN-2000) Ken Kurokawa, Osaka University, Genome Information Research Center; 3-1, Yamadaoka, Suita, Osaka 565-0871, Japan (E-mail:ken@gen-info.osaka-u.ac.jp, URL:http://www.gen-info.osaka-u.ac.jp/, Tel:81-6-6879-8365, Fax:81-6-6879-2047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohnishi, M., Kurokawa, K., Makino, K., Yasunaga, T., Shinagawa, H. and Hayashi, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Complete genome sequence of enterohemorrhagic Escherichia colional and genomic comparison with a laboratory strain K-12 DNA Res. 8 (1), 11-22 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashi,T., Makino,K., Ohnishi,M., Kurokawa,K., Ishii,K., Yokoyama,K., Han,C.-G., Ohtsubo,E., Nakayama,K., Murata,T., Tanaka,M., Tobe,T., Iida,T., Takami,H., Honda,T., Sasakawa,C., Ogasawara,N., Yasunaga,T., Kuhara,S., Shiba,T., Hattori,M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Complete nucleotide sequence of the prophage VT1-Sakai carrying the shiga toxin I genes of the enterohemorrhagic Escherichia coli Gene 258 (1-2), 127-139 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yokoyama,K., Makino,K., Kubota,Y., Watanabe,M., Kimura,S.,
Yutsudo,C.H., Kurokawa,K., Ishii,K., Hattori,M., Abe,H., Iida,T.,
Yamamoto,K., Hayashi,T., Yasunaga,T., Honda,T., Sasakawa,C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 286485)
                                                                                                                /evidence=not_experimental
/product="fermentative_D-lactate_dehydrogenase"
/protein_id="BAB35425.1"
/protein_id="BAB35425.1"
/db_xref="GI:33361468"
/translation="MKLAVYSTKOYDKKYLQOVNESFGFELEFFDELLTEKTAKTANG
CEAVCIFVNDDGSRPVLEELKKHGVKYIALCAGFNNVDLDAAKELGLKVVRVPAYDP
RIKGFGNRLLAFDFYBSAALELGVETVDLFTLSESDY15LHCPLTPENVHLLNBA
ADDVFRRLSACHNVLTSRGALIDSQAAEALKNQKIGSLGMDVENERDLFFEDKSNDVI
ODDVFRRLSACHNVLFTGHQAFLTAEALTSISOTTLONLSNLEKGETCPNELV"
2024. 4663
Note="similar to YDBH_ECOLI gi|1787646 percent identity
                                                         /gene="ECs2003"
                                                                                                                                                                                                                                                                                                                                                   complement(827...1816)
/gene="Ecs2002"
/note="similar to LDHA_ECOLI g1|1787645 percent identity
g9 in 329 aa (Conserved in E.coli K-12)"
/codon_start=1
/transL_table=11
                                                                                                   /gene="ECs2003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /sub_strain="RIMD 0509952"
/db_xref="taxon:83334"
complement(294 . 716)
/gene="$C$2001"
complement(294 . 716)
/gene="EC$2001"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'translation="MKYAAFVALSLLMAGCVSNDKIAVTPEQLQHHRFVLESVNGKPVTCDKKNPPEISFGEKMMISGSMCNRFSGEGKLSNGELTAKGLAMTKNMCANPQLNELDCOMPLEMENT(827, 1816)

/gene="ECs2002"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental /product="heat shock protein hslJ" /protein_id="BAB35424.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="BAB35424.:
/db_xref="GI:13361467"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="similar to HSLJ_ECOLI gi|1787644 percent identity 99 in 140 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Escherichia coli 0157:H7"
/strain="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
```

```
/transl_table=11
/vuidence=not_experimental
/vuidence=not_experimental
/product="putative BigA-like protein"
/protein_id="BAB3429_1"
/db_xref="GI:13361472"
/translation="MORKKLLSVCVAMALSSQTWAADTSIPDSTEKTRKSSKITCPAN
IHSLSKEDLENLSACERNKDSAVLPWAAAGLAAVATGIAIYTLSDDNHHHNNSPVP
DDGGDTPVPDDGGDTEVPDDGGDTPVPPDDGGDTPVPPDDGGDTPVPPDDGGDTPVP
DDGGDTPVRHHPVYXKNGYWMADDAKTVKLRSTTFTYSQNADGSTTLTAPEGKETIV
KSWTVHDDSWTVVFDGVNTSGGITWSYDDDGLHTTFTYSQNADGSTTLTAPEGKETIV
RSGTVHDDSWTVVFDGVNTSGGITWSYDDDGLHTTFTYGNADGTTGNALEFGMAII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=not_experimental
/evidence=not_experimental
/product="hypothetical protein"
/product="hypothetical protein"
/product="hypothetical protein"
/protein_id="BAB35426.1"
/protein_id="BAB35426.1"
/protein_id="BAB35426.1"
/protein_id="BAB35426.1"
/translation="MLGKYRAVLALLLIITLVPLTLLMTLGLMVPTLAGIWLPLGTRI
/protesperimentalion
/translation="MLGKYRAVLALLLIITLVPLTLLMTLGLWVPTLAGIWLPLGTRI
/protesperimentalion
/translation="MLGKYRAVLALLLIITLVPLTLLMTLGLWVPTLAGIWLPLGTRI
/protesperimentalion
/translation="MLGKYRAVLALLIITLVPLGTRI
/protesperimentalion
/translation="MLGKYRAVLALLIITLVPLGTRI
/protesperimentalion
/translation="MLGKYRAVLANDWIDPLLDLFWQTTROJLTVPLAGIRAVLALPO
/protesperimentalion
/protesperimen
{\tt TDQGGNTALNGGTVMTVDGDNISLNNDGKTTAIGEGSVVGILTGDNITINNNGETEVD}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="unknown, similar to BigA protein [Salmonella typhi] dad|AF133185-1|AAD29677.1 percent identity 32 in 1006 aa, similar to N-terminal part (1-1128 in 2020 aa) of Ydba. 2 [Escherichia coli] gi|7465766|pir||C48399 percent identity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5590. .8625
/gene="ECs2006"
5590. .8625
/gene="ECs2006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to YDBL_ECOLI gi|1787648 percent identity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="ECs2005"
4850. .5176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="ECs2004"
4660 .4845
/gene="ECs2004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="ECs2005"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /Product="hypothetical protein"
/protein_id="BAB35427_1"
/db_xref="G1:13361470"
/translation="MKIVIAAFASSFMLVGCTPRIEVAAPKEPITINMNVKIEHEIII
vanwamanarumment""
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90 in 61 aa (Conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="similar to YNBE_ECOLI gi|1787647 percent identity 90 in 61 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WLEQNAQLPETGCPSGKECEEKQ"
4660 .4845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RSSTRINLDNLGVLTMQANISGTSRVDGKSGTVNLNYHHEENIFTLWRSLRFGDNLQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in E.coli K-12)"
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db 246743 TAATCCGGACACCGGTAACAGC 246722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                               MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291136
Escherichia coli O157:H7 DNA,
AP002556 BA000007
APD00555 **
                                                                                                                                                                                                                                                                                                                                                               2 (sites)
Ohnishi,M., Murata,T., Nakayama,K., Kuhara,S., Hattori,M.
Kurokawa,K., Yasunaga,T., Yokoyama,K., Makino,K., Shinaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Makino,K., Yokoyama,K., Kubota,Y., Yutsudo,C.H., Kimura,S., Kurokawa,K., Ishii,K., Hattori,M., Tatsuno,I., Abe,H., Iida,T., Yamamoto,K., Ohnishi,M., Hayashi,T., Yasunaga,T., Honda,T., Sasakawa,C. and Shinagawa,H.

Complete nucleotide sequence of the prophage VT2-Sakai carrying the verotoxin 2 genes of the enterchemorrhagic Escherichia coli 0157:H7
Complete nucleotide sequence of the prophage VT1-Sakai carrying the Shiga toxin 1 genes of the enterohemorrhagic Escherichia coli 0157:H7 strain derived from the Sakai outbreak
                                                                                                                                                                                                                                                Comparative analysis of the whole set of rRNA operons between an enterchemorrhagic Escherichia coli O157:H7 Sakai strain and an Escherichia coli K-12 strain MG1655 Escherichia coli K-12 strain MG1655 Syst. Appl. Microbiol. 23 (3), 315-324 (2000)
                                                                                    Shinagawa, H
                                                                                                        Yokoyama, K., Makino, K., Kubota, Y., Watanabe, M., Kimura, S., Yutsudo, C.H., Kurokawa, K., Ishii, K., Hattori, M., Abe, H., Iida, TYamamoto, K., Hayashi, T., Yasunaga, T., Honda, T., Sasakawa, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Escherichia coli 0157:H7 (strain:0157:H7, sub_strain:RIMD 0509952)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AP002556.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; gamma subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20198780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                  (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genet. Syst.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="unknown, similar to BigB protein [Salmonella typhi] dad|Ari33185-2[AAD29678.]percent identity 7.2 in 740 aa, similar to C-terminal part (1220-2020 in 2020 aa) of YdbA.2 [Escherichia coli] gi[7465766[pir][C48399 percent identity 77 in 806 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8881. .11304
/gene="ECs2007"
8881. .11304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DESTICLDVSGNNUNMTLATYELNVTGQKATGVNVSGDGNTIEIAGSILVDKXDKADNA
OPYFFNPSTGVNISGDNNDVTLDGQLTVVADSKTTSRSYRDGAQEHIAGIVIAGDD
NTFILNGGVHFVGEKNVMDDGSKPSASRRGIGDTPLINVDGHSPVYLNGESTISGEFP
LGFENLIQLSHGAELEIGADATFDMSDVDSFTYYYRVALSTISIDSGAKATNNGEVEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTAVIINGDNTKLNTAGDSTITNGGTGSLINGDNARVDNQGTMSVDGENSTGSKIVG
DGATIKQEGDLYVSGGAHGIDVDGNDTFVSNKGNITVIEDNSIGMLLDGDGVSVINMG
DLNVGQAAAGENAIGIQIDGDNATFVNVGDISATNAGTGVSVAGDKANISLAGGLDVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NHENGVITVYNAGAGMAAYGNTNTVINQGTINLEKNENYNDSLGVNKLVGMAVYHEGT
AINDQTGVININAENGQAFYNDGTGLIINYGTICTFGVC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KNIGFAAAWNKDSTVINNGSIGLAMYDFGTDPAPKVFDVEYGGIGVNNGTMTTKMMNQ
HSVLNYPAEWNLSDGTSFNNKALGLTGMLASYSSSILNGETGIIDMYGRGSVGMLAID
KSTADNEGQITLDTLWVDENDETSLRNNVANSTAKDFGVGMASGTDAYNGALTKATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8881. .11304
/gene="ECs2007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:13361156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.08; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the Sakai outbreak
Syst. 74 (5), 227-239 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 22; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               t, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genome, section
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 286485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                            Shinagawa, H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BCT 07-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                     Iida, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Information Research Center; 3-1, Yamadaoka, Suita, Osaka 565-0871, Japan (E-mail:ken@gen-info.osaka-u.ac.jp, URL:http://www.gen-info.osaka-u.ac.jp/, Tel:81-6-6879-8365, Fax:81-6-6879-2047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genome project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (26-JUN-2000) Ken Kurokawa, Osaka University, Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashi,T.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ohnishi, M., Kurokawa, K., Makino, K., Yasunaga, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O157:H7 and genomic comparison with a laboratory strain K-12 DNA Res. 8 (1), 11-22 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Complete genome sequence of enterohemorrhagic Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shinagawa, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashi,T., Makino,K., Ohnishi,M., Kurokawa,K., Ishii,K., Yokoyama,K., Han,C.-G., Ohtsubo,E., Nakayama,K., Murata,T., Tanaka,M., Tobe,T., Iida,T., Takami,H., Honda,T., Sasakawa,C., Ogasawara,N., Yasunaga,T., Kuhara,S., Shiba,T., Hattori,M. and Shipaswara,N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene 258 (1-2), 127-139 (2000) 20564182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1
                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="putative TonB dependent outer membrane receptor"
/protein_id="BAB35116.1"
/db_xref="GI:13361158"
/translation="MRLKKHYLCTALSLAFTQOAVAAQESDSLTVWSSPVSSTTTTVL
DOPTMKALDKQNVAQALSVVPGVVLQKSGSRNEEQVKVRGFDSRQVPVYFDGVPIYVP
YDGNLDLARILINNLCAVEVSKGYSSLLQGPNQMGGAINITTQKPTKPLEASLGYRQG
WSRSQDNAYDMHASFAASSELGYLQVSGSQLKQDFLGLPHGVNNDIAGKHGKMINSSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="hypothetical protein"
/protein_id="BAB35115".1"
/db_xref="GI:13361157"
/translation="mGIIAWIIFGLIAGIIAKLIMPGRDGGGFFLTCILGIVGAVVGG
WLATMFGIGGSISGFNLHSFLVAVVGAILVLGVFRLLRRE"
                                                                              /gene="ECs1694"
                                                                                                                                                                                                                                                DDKRGIYKLGFTPRENDEYTLTYIKQDGEKDNPPYSGNSGQXSRYWQWPEYDKESFYY
GGTTGLUDRFTLKSRLYRDTENTLMYNSLADLKNIKGSYSHYSDGAGLQLAAD
YRENDLLTFRYNWKDDYHREKGAPHAAYDRYBDTWSLADLSYGWAAADNUVVAGISY
DWRDSYEAKKHEKDGSITHYDDNNQSAFNWQVMGKYHFVNEDTLALSYYDRKRFPTLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="probable TonB dependent outer membrane receptor similar to TonB dependent outer membrane receptor Prra [Escherichia coli (ETPO73] g1|3661477|gb|AAC61709.1| percent identity 97 in 656 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement(430. .2400)
/gene="ECs1693"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement(430. .2400)
/gene="ECs1693"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="similar to YMGE_ECOLI gi|1787445 percent identity
97 in 84 aa (Conserved in E.coli K-12)"
                                                                                                                                        ASVNNLFDTQYAYSEGFVEEGRNFWAGVEYTF"
                                                                                                                                                                        QTMTAWMTLKPWEPLSVTLSEEARSSSYSNSDGSQKAAGFAVTHIRADYTLGHGFSVN
                                                                                                                                                                                            ERYTTSKPAYNQIAIVNPQLKPERARGVDLTWNGAFTHDWGFEVSVYYNRVSDAILSH
NIDADTIQNQNSGTVDYSGLDAGIKGKISNILDVGLSYALIHADAKRKDIGKITDLPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=11
/note="molybdenum transport protein,similar to molybdenum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="ECs1692"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sub_strain="RIMD 0509952"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transl_table=11/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="ECs1692"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'db_xref="taxon:83334"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .291136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to 291136)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shinagawa, H. and
```

VERSION KEYWORDS

SOURCE

AP002556

Locus

REFERENCE

TITLE

TITLE

TITLE

Ş

Sd

gene

```
/note="probable ABC transporter protein (permease), similar to ABC transporter permeases e.g. [Haemophilus influenzae] gi|2501391|sp|Q57130|YE71_HAEIN percent identity 40 in 323
                                                                                                                                                                                                    /product - putative ferric enterobactin transport
/product - putative ferric enterobactin transport
/protein_id='BAB35120_1"
/protein_id='BAB35120_1"
/bbxref="GI:13361162"
/translation="MTLLAVRHASLGYSRHPVLRDVSFTLSOGTICCLLGANGCGKTTLHSSILGVIPLLLAGEVLLDSLPVQTLSHRQRAQAIAWVPQAHDGIFAFSVLDWVLMGLLLDSLPVQTLSHRQRAQAIAWVPQAHDGIFAFSVLDWVLMGLLLLDEPASSLDFGHQTULDTLAQLKNUGMTMLMSTHHPLHANAIADSIIQVEPDGRV
TOGLPTBQLTTNKLAALYRVSADQIHHHLSAISH"
                                                                                                                                               complement(4854. .5834)
/gene="ECs1698"
                                                                                                                                                                                           complement(4854. .5834)
/gene="ECs1698"
                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="probable ferric enterobactin transport, similar ferric enterobactin transport ATP-binding protein [Escherichia coli CFT073] 9i|3661480|gb|AAC61712.1|
                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
/product="hypothetical protein"
/protein_1d="paB35119.1"
/db_xref="GI:3361161"
/translation="MLIDDIDFADLYLOOLKLAHRTEKTPDHWDQRAEKMAENCASPT
/translation="MLIDDIDFADLYLOOLKLAHRTEKTPDHWDQRAEKMAENCASPT
ALKADNYHLIOQRAWEEMWSDLPRCDIAVASRSTLVADMROAMSKLNNQARLRVYTHL
VSTSYSPAIQRAAGREVIELFNYIFALNVLYQMGIYAHVDFIRGONCQQDNST"
VSTSYSPAIQRAAGREVIELFNYIFALNVLYQMGIYAHVDFIRGONCQQDNST"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(4099, .4857)
/gene="ECs1697"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (4099 . . 4857)
/gene="ECs1697"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/transl_table=11
/evidence=not_experimental
/product="nypothetical protein"
/product="de"BAB35118 1"
/db_xref="GI:13361160"
/translation="MPTLILS/DKIANRITAPRNVLSRTSAGVLARLTTMSVSGYIAG
INNKMLVPSPLPAATGRSSGGIAYRRHCDDFPFSGTNRCVTSGRYPGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="unknown.similar to hypothetical proteins e.g. Orf2 (Escherichia coli CFT073) gil3661479|gb|AAC61711.1| /codon_start=1 98 in 214 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(3445. .4089)
/gene="ECs1696"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement(3445 ...4089)
/gene="ECs1696"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="ECs1695"
complement(3219..3500)
/gene="ECs1695"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(3219. .3500)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LLFANHRHFLHDNODWSGAINOLRRHAFEKKIVVEADTPKEAIAALRAQPDVLQLDKF
SPQQATELAQIAPSLAPHCTLALTGGINLTTLKNYLDCGIRLFITSAPYYAAPADIKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MIFLSQAQIDALLLEDIQGGDLTTRALNIGHQHGYIEFFLRQGG
CVSGVSVACKMLTTLGLTIDDAVSDGSQANAGQRLIRAQGNAAALHQGWKAIQNVLEW
SCGVSDYLDQMLALLRERYPDGNIACTKKAIPGTRLLASQAILAAGGLIHRAGGAETI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="molybdenum transport protein"
/protein_id="BAB35117,1"
/db_xref="GI:13361159"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uansport proteins e.g. gi|3661478|gb|AAC61710.1| percent
identity 91 in 284 aa<sup>n</sup>
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        L_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ç
           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGHRGBEHA/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 101095 TAATCCGGACACCGGTAACAGC 101116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                      gene
                                                                                                                                  rRNA
                                                                                                                                                                       misc_RNA
                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local (
                                                                                                                                                                                                                                                                        rRNA
                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                    rRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                              misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291 TAATCCGGACACCGGTAACAGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    transcribed spacer sequences of nuclear ribosomal DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Comparision of phylogenetic hypotheses among different dwarf dandelions (Krigia): additional information from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kim, K.-J. and Jansen, R.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids II; Asterales; Asteraceae; Lactuceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18S ribosomal RNA; 25S rib
Agoseris heterophylla DNA.
Agoseris heterophylla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGREGBEHA
AGGREGBEHA
AGGREGIS heterophylla partial 18S ribosomal RNA (18S rRNA)
ribosmal RNA (25S rRNA) genes; complete 5.8S ribosomal RNA
rRNA), gene; complete internal transcribed spacers 1 and 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L13954.1 GI:304020
                          151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 702)
                        ש
             /gene="25S rRNA"
187 c 189
                                                             /product="25s ribosomal RNA 665. .702
                                                                                                                       /product="internal 665. .>702
                                                                                                                                                                 /gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                              /gene="25S rRNA"
                                                                                                                                                                                                      /gene="5.8s rrNA"
/product="5.8s ribosomal
279. .442
                                                                                                                                                                                                                                                                           'product="internal
                                                                                                                                                                                                                                                                                                            /gene="18S rRNA"
33. .278
                                                                                                                                                                                                                                                                                                                                                    /product="18S ribosomal RNA"
                                                                                                                                                                                                                                                                                                                                                                              /gene="18S rRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Agoseris heterophylla"
/db_xref="taxon:19017"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="probable ABC transporter, weakly similar to iron (iii) ABC transporter, ATP-binding protein [Pyrococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="mrivngcillaaisitfaavsgayhldmoqlialilrqenvpy
DEQIVFWQIRVERILAALLIGAALAGAGTTYQGMLRRELVSPDIILGVSAGAGILGACTA
ILWGLSIVYIQLYAFCGGLMVVAGVWLITRRVTRHDFILTIVLVGIALFLGGAGISL
IKTLADDYQLDSITFWLLGGLSTVTLBLCYAAFIILIGSLFLFFLRWRMNLLTLSD
DEARSLGLNVTRLRFVLIVCATLITASTYAIAGIIGWVGLVVPHIABLLTGHNHQQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement(5834 . .6856)
/gene="ECs1699"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Complement(5834. .6856)
/gene="ECs1699"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PMAMCTGAILLLLTDTLARSIGTTEIPLGILTAFVGAPPFLLLLLRGGRO
                                                                                                                                                            . 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
/product="putative ABC transporter permease protein"
/protein_id="BAB35121.1"
/db_xref="GI:3361163"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.68;
                                                                                                                                                                            .8S rRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25S ribosomal RNA; 5.8S ribosomal RNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 22;
Pred. No.
             9
                                                                                                                             transcribed
                                                                                                                                                                                                                                                         transcribed spacer 1 (ITS1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
        174 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                  spacer 2 (ITS2)"
    μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 291136;
```

from internal

ä

Indels

0,

Gaps

0,

PLN 26-JUL-1993 3S rRNA) and 25S DMal RNA (5.8S

gene

CDS

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on:
      110
112
113
114
                                                                                                                                                                                                                                                                                                                                                                    and is
                                                                                                                                                                                                                                                                                                                                                                                     score
                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.
                                                                                                                                                                                                                          815
303. r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B B
   283
2528.5
251.5
251.5
251.5
251.5
244
236.5
236.5
236.5
236.5
236.5
236.5
236.5
237.5
237.5
                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                                                                                                                                                              No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed.
                                                                                                                                                                                                                                                                                                                                                                    derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungl:*
4: sp_human:*
5: sp_inverteb:
6: sp_mammaal:*
7: sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length:
                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-677-374-4
832
                                                                                                                                                                                                                                                                                                                                                                                                                                       8:
9:
10:
11:
12:
13:
14:
15:
16:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         October 27, 2002, 10:56:01 ; Search time 18.0743 (without alignments) 1540.986 Million cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562222 seqs, 172994929 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 ,
   MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                    by analysis of the total
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_unclassified:*
sp_rvirus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_plant:*
                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000000000
   162
148
159
137
144
137
144
151
151
131
105
105
182
                                                                                                                                                                                                                                                                                      DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapext
     116
   Q53154
Q9F9Q9
Q9F9Q1
Q952637
Q9L523
Q9L522
Q31208
Q9AGC7
Q9AGC7
Q9B5G4
                                                                                                                                                  Q9F9K8
054381
Q9F9F2
052252
Q9K2N6
031065
Q9K4W8
                                                                                                                                                                                                                                                                                      ij
                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                    score distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          562222
09f9k8 pisciricket
054381 rickettsia
09f9f2 rickettsia
09f9f2 rickettsia
052252 rickettsia
09k2n6 male-killin
031065 rickettsia
09k4w8 male-killin
051154 rickettsia
09f9q9 rickettsia
09f9q1 rickettsia
09f9q1 rickettsia
09f0q1 rickettsia
09f0q7 rickettsia
09d5q7 rickettsia
09d5q7 rickettsia
09d5q7 rickettsia
                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seconds
   pseudomonas
                                                                                                                                                                                                                                                                                     ID ACCOCK ON THE REPORT OF THE RESERVE OF THE RESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9F9K8
                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9F9K8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kuzyk M.A., Burian J., Thornton J.C., Kay W.W.; "Identification of a genus-common Rickettsial sustainonid pathogen Piscirickettsia salmonis."; submitted (SEP-1999) to the EMBL/GenBank/DDBJ diembl; AF184152; AAG17000.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 17 KDA ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-LF-89,
                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Piscirickettsia salmonis.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OSPA
                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=1238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KDA ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
```

ALIGNMENTS

gamma

subdivision; Piscirickettsia group;

Created)
Last sequence update)
Last annotation update)

162 A

Qy 122 Db 123	L.	Qy 2 Db 3	Best Lo Matches
122 RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK 161 	62 GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER 121	2 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL 61 	Best Local Similarity 98.8%; Pred. No. 1.5e-65; Matches 158; Conservative 1; Mismatches 1; Indels 0; Gaps

DDE99E6FD94A527E CRC64;

databases. surface antigen

'n

```
RESULT
Q9F9F2
ID Q9
AC Q9
DT 01
DT 01
DT 01
DE 117
OC R;
OC 
                                                                         В
                                                                                                                               δõ
                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
05431

ID 05431

AC 05431

DT 01-JJ

DT 01-JJ

DT 01-JJ

DT 01-JJ

DT 01-JJ

CR 17 KI

OC Back

OC Rick

OC Rick

OC Rick

CR Rick

RI (J)

RA David

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09F9F2 PRELIMINARY;
09F9F2;
01-MAR-2001 (TrEMBLrel 16, C)
01-MAR-2001 (TrEMBLrel 19, L;
01-DEC-2001 (TrEMBLrel 19, L;
17 KDA GENUS-COMMON ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                            spotted fever group.";
Int. J. Syst. Evol. Microbiol. 51:339-347(2001).
EMBL, AF195118; AAG28452.1;
                                                                                                                                                                                                                                                                                                                                                                                                                       SEÓUENCE FROM N.A.
MEDLINE-21217364; PubMed-11321078;
Bouyer D.H., Stenos J., Crocquet-Valdes P., Moron C.G., Popov V.L.,
Zavala-Velazquez J.E., Foil L.D., Stothard D.R., Azad A.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia felis (Rickettsia azadi).
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=42862;
                                                                                                                                                                                                                                                                                                                                                                                   "Rickettsia felis: molecular characterization of a
                                           8 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132 KAYGTACROPDGQWQVV 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

MEDILINE-98087556; PubMed=9425244;

Davis M.J., Ying Z., Brunner B.R., Pantoja A., Ferwerda F.H.;

"Rickettsial relative associated with papaya bunchy top disease.";

EMBL; U76907; AAC02809.1; "..."
SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsia sp. Bacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-1998 (TremBLrel 06, Create 01-JUN-1998 (TremBLrel 06, Last s 01-NOV-1998 (TrEMBLrel 08, Last s 17 KDA COMMON-ANTIGEN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25
                                                                                                                                                                                    61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EIYGTACPQPDGRWQVI
                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY-----KNNTGQYCREYTQTVVVGGKQQ 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NKOGSGTLIGGTLGGLVGSQFGGGTGRLAAVGAGALLGAILGNQIGAGMDEQDRKLAELT 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IK 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148
148 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                        28452.1; -
16497 MW;
                                                                                                                                                                                              34.08;
37.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15050 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157
                                                                                                                                                                   30;
                                                                                                                                         Score 283; DB 2;
Pred. No. 6.9e-18;
30; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                              34C5B020AF470A1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 303.5; DB 2;
Pred. No. 9.2e-20;
30; Mismatches 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A7AFEEFDE0AEEE4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length
                                                                                                                                                                                              Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43;
                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                      new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                         member of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9;
                                                                                                                        6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
В
                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schulenburg H. J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
"On the evolution of male-killing: Monophyletic origin and horizontal
transfer of male-killing Rickettsia (a-Proteobacteria) from two con-
generic ladybirds, Adalia bipunctata L. and A. decempunctata L.
Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AJZ69518; CAB96383.1; -.
EMBL; AJZ69517; CAB96382.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
                                                                                                                                    O9K2N6;
O1-CCT-2000 (TrEMBLrel. 15, Created)
O1-CCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-CCT-2000 (TrEMBLrel. 15, Last sequence update)
17KDA ANTIGEN (17 KDA ANTIGEN), LEFAGMENT)
male-killing Rickettsia from Adalia bipunctata.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Kickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ДЬ
                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                        Q9K2N6
                                                                                                                                                                                                                                                                                                       121 GKQQKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Molecular characterization of a novel spotted fever group species from Ixodes scapularis in Texas.";
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria;
Rickettsiaceae; Rickettsie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-1998 (TrEMBLrel. 06, 01-JUN-1998 (TrEMBLrel. 06, 01-DEC-2001 (TrEMBLrel. 19, 17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=69410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia cooleyi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            052252
                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 KQERRQQYCREFQQKAMIAGQKQETYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                            GOKOEIYGTACPOPD 151
                                                                                                                                                                                                                                                                                                                                     AELTSORALEAAPSGSSTEWENPDNGNYGYVTPNKTY-----RNSTGOYCREYTGTVVIG
                                                                                                                                                                                                                                                                                                                                                        --IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERROQYCREFQOKAMIA 136
                                                                                                                                                                                                                                                                                                                                                                                RGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGACMDEQDRRL 65
                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGLWQVVN. 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLGGOIGAGMDEODRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGLIGSKIGOSMDQQDK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               obacteria; alpha subdivision; Rickettsiales; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.1%; 39.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                             25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 258.5;
Pred. No. 9e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                  9e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                      46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119
                                                                                                                                                                                                                                                                                                                                                                                                                            4.
```

```
RESULT
Q9K4W8
ID Q9
AC Q9
DT 01
DT 01
                                                                                                                                   δÃ
                                                                                                                                                              В
                                                                                                                                                                                  Q
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               So
                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best
 Q9K4W8;
Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O31065 PRELIMINARY; PRT; 137 AA.
O31065; 99W02;
O1-JAN-1998 (TrEMBLrel. 05, Created)
O1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
O1-OCT-2001 (TrEMBLrel. 18, Last annotation update)
O1-OCT-2001 (TrEMBLREL. 18, FAST annotation update)
O1-OCT-2001 (TREMBLREL. 18, FAST ANNOTATION update)
                                                                                                                                                                                                                                                                                                                                                  Stenos J., Roux V., Walker D., Raoult D.;
"Rickettsia honei sp. nov., the aetiological
spotted fever in Australia.";
Int. J. Syst. Bacteriol. 48:1399-1404(1998).
EMBL; AF027124; AAB81846.1;
EMBL; AF060706; AAD20231.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Billings A.N., Yu X.-J., Submitted (SEP-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia honei.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-99045882; PubMed-9828442;
                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-TT-118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                               124 QKAYGNACRQPD
                                                                                                                                        140 QEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                 69
                                                                                                                                                                                       80
                                                                                                                                                                                                                10
                                                                                                                                                                                                                                       25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                              KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                       SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                              TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QKAYGNACRQPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTACPQPD 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                                                                         AF060704; AAD20230.1; -.
                                                                                                                                                                                                                                                               Similarity 39.4
52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 52; Conser
                                                                                                                                                                                                                                                                                                                137 AA; 14167 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               144
 (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α̈́,
                                                                                                               135
                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14785 MW;
                                                                                                                                                                                                                                                                            30.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30.3%; Score 252.5; DB 2; 39.4%; Pred. No. 3.3e-15;
  15,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Teel P.D., Walker D.H.;
che EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                                                                                                                                                                                                                                                               Score 251.5;
Pred. No. 3.8e
24; Mismatches
 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C8254739CCA56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                 75BC1D0D745B428C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                  144
                                                                                                                                                                                                                                                                .8e-15;
les 45;
                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                       agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45;
                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 144;
                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                       Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                       of Flinders
                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                      Island
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                       79
                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
Q53154
             Ş
                                     밁
                                                          ρy
                                                                                     Вþ
                                                                                                          Qy
                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                        Matches
                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE-93084757; PubMed=1452660;
Baird R.W., Lloyd M., Stenos J.,
"Characterization and comparison
group rickettsiae.";
                                                                                                                                                                                                                                                                                                                 Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-20575219; PubMed-11133455; Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K., Bertrand D., Hurst G.D.D., Majerus M.E.N.; "Incidence of male-killing Rickettsia Spp. (alpha-Proteobacteria) the Ten-Spot Ladybird Beetle Adalia decempunctata L. (Coleoptera:
                                                                                                                                                                                                   J. Clin. microbiol. 30:2896-2902(1992). EMBL; m99391; AAA73386.1; -. NON_TER 154 154
                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence up
01-NOV-1996 (TrEMBLrel. 08, Last annotation
(CLONE PRB FISF 1), 5' END CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Coccinellidae).";
Appl. Environ. Microbiol. 67:270-277(2001).
EMBL; AJZ69516; CAB96381.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17 KDA ANTIGEN (FRAGMENT).
male-killing Rickettsia from Adalia decempunctata.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiace; Rickettsia.
                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                Q53154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=120393;
                                                                                                                                                                                                                                                                                                               NCBI_TaxID=789;
             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131 QKSYGNACRQPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    140
                                                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                     64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                       5
                                                                                                             8
KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                    GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNST
                                                                                    SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                           SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QEIYGTACPQPD 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                             GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
52; Conserv
                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              144 AA;
                                                                                                                                                                                       154 AA;
                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14801 MW; C825472F16A56AE7 CRC64;
                                                                                                                                                                                       15849 MW;
                                                                                                                                                 29.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30.2%;
                                                                                                                                    31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24;
                                                                                                                                      Score 244; DB 2;
Pred. No. 2.1e-14;
1; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 251.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                PRT:
                                                                                                                                                                                       F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                  Ross B.C., Stewart R.S., of Australian human spot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No. 4.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                AΑ
              153
                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DΒ
                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45;
                                                                                                                                                                                                                                                                                                                                         Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                              Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 144;
                                                                                                                                                                                                                                                   spotted
```

11;

Gaps

4,

Ħ

75

Dwyer

yer B.; fever

16;

Gaps

6 0

63 61

밁

124

GQD-----CRVYTQTVVIGGKQQKAYGNACRQPDGQ 154

Q.

```
Query Match
Best Local S
Matches 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OSE909

TO 05

T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                     SEQUENCE FROM N.A.
STRAIR-CALIFORNIA 2:
ROUX V., RAOULT D.;
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF210693; AAG48554.1; -.
                                                                                                                                                                                                                                                                                                             O9F001;
O9F001;
O1-MAR-2001 (TrEMBLrel. 16, Created)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence update)
O1-MAR-2001 (TrEMBLrel. 16, Last annotation update)
I7 KDA PROTEIN (FRAGMEN)
Rickettsia sp. California 2.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaeae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 35.9
55; Conservative
                                                                                                                                                                                                              Raoult D.;
"A new SFG rickettsia isolated from fleas.";
"Lead (JAN-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                   STRAIN=CALIFORNIA 2;
                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9F0Q1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120 -RNSTGÖYÖREYTQTVVİGGKQQKAYGNACRQP 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQP 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SECURAL TERMS 151 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "NOVEL peptide diagnostic reagent and kit for detection rickettsiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia helvetica.

Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nilsson K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09F9Q9;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2001 (TrEMBLrel 16, Created)
01-MAR-2001 (TrEMBLrel 16, Last sequence up
01-MAR-2001 (TREMBLREL 16, Last annotation
                                          d9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9F9Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAVLGGQIVAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSLIIISV---FLVGC--AQNFSROEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                               131
131 AA;
                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151 AA;
                                                                                      131
.; 13374 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                               28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15621 MW; B77407B9C71E4B39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28.7%;
35.9%;
                       ; Score 236.5; DB
; Pred. No. 8e-14;
24; Mismatches
                                                                              23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 239;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151
                       44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
.7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54;
                                            Length 131;
                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                 11;
           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6,
Q9L522
                                                                                                                                                                                                                                            RESULT 12
                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                 08
```

```
Q91522;
Q1-OCT-2000 (TrEMBLrel. 15, Created)
Q1-OCT-2000 (TREMBLrel. 15, Last seq.
Q1-DEC-2001 (TREMBLrel. 19, Last ann
TRDA SURFACE ANTIGEN (FRAGMENT).
 STRAIN-DAE100R;
MEDLINE-21091941; PubMed-11157215;
Simser J.A., Palmer A.T., Munderloh
                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q52637
                                                SEQUENCE FROM N.A.
                                                                       Rickettsia peacockii.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                              Q9L522
                                                                                                                                                                                                                                                                          124 OKAYGNAC
                                                                                                                                                                                                                                                                                                   140 QEIYGTAC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=94117373; PubMed=8288533;

Werren J.H., Hurst G.D., Zhang W., Breeuwer J.A., Stouthamer R.,

Majerus M.E.;

"Rickettsial relative associated with male killing in the ladybird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             beetle (Adalia bipunctata).
J. Bacteriol. 176:388-394(1
EMBL; U04162; AAA19235.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Kickettsicae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TrEMBLrel 01, Created)
01-NOV-1996 (TrEMBLrel 01, Last seg
17 KDA ANTICEN (TREMBLE) 08, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Loca1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q52637;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q52637
                                                                                                                                                                                                                                                                                                      TSORALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                            KLNOSLEKVKAGQVTRWRNPDTGNSYSYEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                          SRQEVGAATGAVVGGVAGQLFGKGSGRVSWAIG-GAVLGGLIGSKIGOSMDQODK----I 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 124 QKAYGNAC 131
                                                                                                                                                                                                                                                                                                                                                        NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQTGAGMDEQDRRLAEL 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80 KLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                                                                                                                                                                                                                                                                                                                                                         49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTAC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NKQCTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
.; 13344 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      388-394(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                               28.4%;
                                                                                                                             15, Created)
15, Last sequence update)
19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                  24;
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 236.5; DB
Pred. No. 8e-14;
24; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlDCF71050DF52DF CRC64;
 U.G.,
                                                                                                                                                                                           131 AA.
Kurtti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      131
                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                       44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79
                                                                                                                                                                                                                                                                                                                                                                                                              4.
```

```
RESULT
Q9AGC7
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 17
OS R1
OC BB
                                                                                                                                                                       ş
                                                                                                                                                                                                밁
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SO SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                   O31208 PRELIMINARY;
O31208;
O31208;
O31208

O1-JAN-1998 (TIEMBLrel. 05, Created)
O1-JAN-1998 (TIEMBLrel. 05, Last sequence update
T 01-JAN-1998 (TIEMBLrel. 19, Last annotation upda
D1-DEC-2001 (TIEMBLREL. 19, Last annotation upda
E 17 KDA ANTIGEN (FRAGMENT).
S Rickettsia sp. 'La Copita'.
OC Bacteria; Proteobacteria; alpha subdivision; Rickettria; Proteobacteria; Rickettsia.
                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                     Q9AGC7 PRELIMINARY;
Q9AGC7;
01-JUN-2001 (TrEMBLrel. 17,
01-JUN-2001 (TrEMBLrel. 17,
01-JUN-2001 (TrEMBLrel. 17,
17 KDA ANTICEN (FRAGMENT)).
                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                            NON_TER
                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-LA COPITA;
MEDLINE-98367252; PubMed-9701930;
Billings A.N., Yu X.J., Teel P.D., Walker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
Rickettsia typhi.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                     "Detection of a spotted fever group rickettsia in (Acari: Ixodidae) in south Texas.";
J. Med. Entomol. 35:474-478(1998).
EMBL; AF033499; AAB86943.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=69475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Isolation of a spotted fever group rickettsia, Rickettsia peacockii, in a Rocky Mountain wood tick, Dermacentor andersoni, cell line."; Appl. Environ. Microbiol. 67.546-552(2001).
EMBL; AF260571; AAF69012.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                  55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                        42 GOLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                                  w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QEIYGTAC
                                                                                                                                                                       NPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPD 151
                                                                                                                                                                                                GQLVGVGV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QKAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                   NPDNGNYGYVTPNKTY - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                   46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 38.3
49; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
131 AA;
                                                                                                                                                                                                                                                                                                  105 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel. 05, Last sequence update)
                                    (TrEMBLrel. 17, (TrEMBLrel. 17, (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                              105
                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147
                                                                                                                                                                                                                                                                                                            105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
13413 MW;
                                                                                                                                                                                                                                                                                                  11236 MW;
                                                                                                                                                                                                                                                          26.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.3%;
                                                                                                                                                                                                  -GALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWR
 alpha subdivision;
                                                                                                                                                 RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPD 103
                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24;
                                    Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                            Score 216.5; DB 2;
Pred. No. 3.7e-12;
""ematches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 235.5; DB 2
Pred. No. 9.8e-14;
4; Mismatches 44
                                                                                      PRT;
                                                                                                                                                                                                                                                                                                7BDD35104701D4FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228C020550CAA9D0 CRC64;
                                                                                      77
                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                      D.H.;
                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiales;
Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                         Amblyomma cajennense
                                                                                                                                                                                                                                                17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                  54
                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                 w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
```

```
γQ
                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q985G4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OC OX RP RA RT RT FT FT FT SQ
Search completed: October Job time: 19.0743 secs
                                                                                                                             Ş
                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                               Query Matcn
Best Local Similarity
Matches 34; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2001
01-OCT-2001
01-OCT-2001
                                                                                                                                                                                                           Complete SEQUENCE
                                                                                                                                                                                                                                                                           Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.;

"Complete genome structure of "Complete genome structure"
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STRAIN-MAFF303099;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MLR7687 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q985G4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q985G4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Paspaliaris V., Liedtke B., Vitetta L., Whiting J.L.;
Paspaliaris V., Liedtke B., Vitetta felis rickettsioses in Australia.";
"Rickettsia typhus and Rickettsia felis rickettsioses in Australia.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                     EMBL; AP003012; BAB54098.1; -.
                                                                                                                                                                                                                                                            "Complete genome structure
Mesorhizobium loti.";
                                                                                                                                                                                                                                                                                                                                                      MEDLINE=21082930; PubMed=11214968;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MLR7687.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF336794; AAK21272.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiaceae;
NCBI_TaxID=785;
                                                                                                                                                                                                                                                 DNA Res. 7:331-338(2000).
                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                                                        Phyllobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
                                                                           105 YSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15
                                                                                                      92
                                                                                                                              49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42 GQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RNPDTGNSYSVEPVRT 112
                                                                                                                             SGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDTGNS 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RNPDNGNHGYVTPNKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSQFGHGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLVELTSQRALESAPSGSNIEW
                                                  GEVVPAQPY - RVGSQD
                                                                                                      SGKVTKSIISAMDGGLIGGSIGNGLSDEEKRSALEAEYKALEYTTSGQKVAWKGDQASHY 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
30; Conserv
                                                                                                                                                                                                           proteome.
199 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7955 MW;
                                                                                                                                                                                                            20517 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                         Mesorhizobium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16.7%;
39.5%;
                                                                                                                                                                  16.5%;
            27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18,
18,
            2002,
                                                 -CRQYTQTVFTGGAGVTARGTACRNADGSW
                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15;
                                                                                                                                                                                                                                                                          of the nitrogen-fixing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation updat
                                                                                                                                                       Score 137; DB 16;
Pred. No. 0.00011;
6; Mismatches 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 139; DB Z; Pred. No. 2.2e-05; wismatches 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B1E447C037263918
                                                                                                                                                                                                            98E6F20A734637AA CRC64;
            10:59:53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                          symbiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77
                                                  195
                                                                            154
                                                                                                                                                        10;
                                                                                                                                                                                                                                                                            bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96
                                                                                                                                                        ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
```

THIS PAGE BLANK (USPTO)

٠,

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB seq length: DB seq length:
               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-677-374-4
832
1 MRGCLQGSSLIIIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      October 27, 2002, 10:55:57; Search time 5.83938 Seconds (without alignments) 1067.553 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105224 seqs, 38719550 residues
   SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000000000
   GenCore version 5.1.3 (c) 1993 - 2002 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DΒ
              17KD_RICPR
17KD_RICAN

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ltd
P22882 rickettsia
P50930 rickettsia
P50930 rickettsia
P50931 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50927 rickettsia
P30929 rickettsia
P30934 bacillus su
P30934 salmonella
P10937 sacharomyc
P30406 rattus norv
P30406 rattus norv
P30406 rattus musculu
P30409 caenorhabdi
P13135 bos taurus
P3065 escherichia
P10837 nephila cla
P10837 nephila cla
P10837 nephila cla
                                                                                                                                                                                                                                                                                                                                                                                                                                                      P16624 rickettsia
Q52764 rickettsia
P05372 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
 Query Match
Best Local Similarity
Watches 61; Conserv:
                                                                            SQ FT SQ
```

Conservative

34.6%; Score 288; DB 1; Length 159; 37.9%; Pred. NO. 3.1e-18; Live 32; Mismatches 52; Indels

16;

Gaps

6

SOFT	KW	DR DR	388	388	38	66	ဂ္ဂင္ဂ	S E	R	RA	RA RA	RX ?	8 R R	R P	RI	RA	R R	R R R	0 X	388	S G	DE		AC	RESU 17KD									
CHAIN LIPID SEQUE	PROSI Outer	EMBL;	or	mod	the	This	:	Nature -!- SUE	mito	Eri	And Sic	MED	SEQ	Ĵ. Ва: {2}	gen	And	STR	(1)	NCB	Bac	OMP OR	17	01-	6	SULT 1 'KD_RICPR		44 45	4 4 3	410	39	ა ა 8 7	<u>ა</u> ა თ თ	34	
NCE	ITE;	EMBL; M28482; A EMBL; AJ235273; DTR: D33971: D3		modified an		ro .	anchor (Probable)			Eriksson A	Andersson S.G.E., Zc Sicheritz-Ponten T.,	MEDLINE-99039499;	SEQUENCE FROM	Bacteriol.	gene.";	Anderson B.E.	STRAIN-MADRID E; MEDLINE-89359171:	UENCE FR	NCBI_TaxID=782	Bacteria; P	RP83	kDa surface	AUG-1991	24;	PR D_RICPR		6		<u>.</u> .	6.	7.		7.	
20 20 20 159 AA;	001; ne;	2; AAA26 273; CAA	n email to	-	n Bioin		(Probab.	396:133-140(19 CELLULAR LOCAT	sequence.	-S., Winkler	-∃		OM N.A.	1. 171:5	e sequence) -		OM N.A.	82;	. დ ჴ	3.	ace ant	(Rel. 15, C (Rel. 19, I		STAL		9.2 9.1			-				
159 20 AA; 16672	ROKAR_ oprote	378.1; 15258.	license	tateme	ormati	is stit	(e).	(1998). CATION:	, o	ler	Zomorodipour	PubMed=		199-5	ice anai	sod	PubMed≖		Ó	ria;			ម្ម		TANDARD;		16 26		6 G	53	66 53	67 43	59	
MW.	LIP	AL' 1;	Se@		CS	@ <u>~</u>			. LCK	H.H.,	lipo	982389		01(rysis	3	27		č	al _l							<u> </u>							
17 N-	LIPOPROTEIN; in; Antigen;	ALT_SEQ. l;	license@isb-sib.ch)	- = ⊦	Institute.	rig		Attached to	CSla	, Kurland		3893;		201(1989).	OI a	,	68201:			lpha subdivis		precursor.			PRT; 1	ALIGNMENTS	1 7	IF2M_HUMAN	ATPA_MOUSE K1CJ_MOUSE	ATPO_BOVIN	ATPA_HUMAN	HEM1_MYCLE ATPA_RAT	ATPA_BOVIN	
KDA SURFACE ANTIGEN. ACYL DIGLYCERIDE (PROBABLE) A33D404B65EEB071 CRC64;	1. Signal; Complete			, 6	0	ed		the outer membrane	prowazekli and the		Andersson J.O., , Podowski R.M., Na				genus-common ricke					ision; Rickettsiale		upuace)	update)		59 AA.	NTS								
ABLE).	e proteome			and	-	ç		ane by a	origin		Naeslund				FICKECUSIAL	† †				iales;							Q24270 P07389	P46199 P04985	Q03265 P02535	P19483	P25705	P46724 P15999	P19482	
	ome.		o cny announce/	Usage by and for commercial	tions on	collaborati outstation		a lipid	01	'n	A . K . ,				antigen						`						രശ		mus musculu	bos taurus		mycobacteri rattus norv	bos taurus	

δõ

œ

Ç

δÃ В Ω

120 118 64 62

```
Or Senu ...

EMBL; D16515; BAA03965.1; ...

PROSITE: PS00013; PROKAR_LIPOPROTEIN; 1.

Outer membrane; Lipoprotein; Antigen; Signal.

1 19 BY SIMILARITY

CHAIN 20 159 BY SIMILARITY

N-ACYL DIGLYCERIDE (PROBABLE).

16554 MW; CDDCE7CEBDCD6B41 CRC64;

1-ongth 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-5229950; PubMed=7714214; Furuya Y., Katayama T., Yoshida Y., Katho I.; "Specific amplification of Rickettsia Japonica DNA from clinical Specimens by PCR." Clin. Microbiol. 33:487-489(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                            KOERROOYCREFQOKAMIAGOKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                GAVLGGOIGAGHDEODRRLAELTSQRALETAPSGSNVEHRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                      -RNSTGOYCREYTÖTVVIGGKQQKAYGNACRQFDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                  SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                          SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGTGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQDDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34.4%; Score 286; DB 1;
Conservative 32; Mismatches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                    52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158
                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                         6;
                                   EMBL; M28479; AAA26379.1; -.
EMBL; M28480; AAA26376.1; -.
EMBL; AE008675; AAL03825.1; -.
EMBL; M16486; AAA26381.1; -.
EMBL; J03371; -; NOT_ANNOTATED_CI
PIR; A25972; A25972.
PIR; A33971; A33971.
PIR; A33971; A33971.
                                                                      CHAIN
                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1-30 FROM N.A.

SPECIES-R.rickettsii;
MEDLINE-89008059; PubMed-3139629;
Anderson B.E., Baumstark B.R., Bellini W.J.;
"Expression of the gene encoding the 17-kilodalton antigen Rickettsia rickettsii: transcription and posttransiational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modification."

J. Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anderson
Fu Z.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Sequence analysis of the 17-kilodalton-antigen gene from Rickettsia";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P05372;
01-NOV-1988 (Rel. 09, Created)
01-AUG-1990 (Rel. 15, Last sequence
01-MAR-2002 (Rel. 41, Last annotat
17 kDa Surface antigen precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=87222152; PubMed=3108232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPECIES=R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPECIES-R.Conorii, STRAIN-Malish 7;
MDDLINE-21442074; PubMed=11557893;
Ogata H. Audic S., Renesto-Audiffren P., Fo
Ramson D., Roux V., Cossart P., Weissenbach
Raoult D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Mechanisms of evolution in Rickettsia conorii and R. prowazekii."; Science 293:2093-2098(2001).
    3971; bus prokan ... ; PS00011; P
                                                                                                                                                                    A33971;
B33971;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPECIES=R.conorii, and R.riokettsii;
MEDLINE=89359171; PubMed=2768201;
Anderson B.E., Tzianabos T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Comparative sequence analysis of a gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteriol. 169:2385-2390(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
Rickettsiaceae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsia conorii, and Rickettsia rickettsii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=781,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteriol. 171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bellini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170:4493-4500(1988)
                                                                                                         PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                             NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Regnery R.L., Carlone G.M., Tzianabos T., McDade J.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oudcteria; alpha subdivision; Rickettsiales;
Rickettsieae; Rickettsia.
783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09, Created)
15, Last sequence up
41, Last annotation
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
N -> D (IN REF. 3).
G -> E (IN REF. 3).
                                                                                            1.
Signal; Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fournier P.-E., Barbe ch J., Claverie J.-M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Barbe
```

SEQUENCE FROM N.A.

Rickettslaceae; Rickettsleae; NCBI_TaxID=35790;

Rickettsia japonica.

01-NOV-1997 (Rel. 01-NOV-1997 (Rel. 01-NOV-1997 (Rel. 17 kDa surf

35, Created)
35, Last sequence upd
35, Last annotation t

STANDARD;

PRT;

159

RESULT 3
17KD_RICCN
ID 17KD_RICCN

STANDARD;

PRT;

159

A

Í

B δÕ 멍 Ş 日 γo

120 118

64

62

ហ 8 Matches Query Match Best Local

61;

•

```
В
                                                                                 Š
                                                                                                                     В
                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
17KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-89359171; Pubmed-2768201;
Anderson B.E., Tzianabos T.;
Anderson B.E., Tzianabos T.;
                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17KD_RICTY P22882;
                                                                                                                                                                                                                                                                                                                               PROSTITE; PSO0013; PROKAR LIPOPROTEIN; 1.
                                                                                                                                                                                                                                                                                                                                                                   EMBL; M28481; AAA26377.1; -. PIR; C33971; C33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiaceae;
NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Bacteriol. 171:5199-5201(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-AUG-1991
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-AUG-1991
                                                                                                                                                                                                                                                                                 LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Comparative sequence analysis
                  140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                    86
                                                                                                                       27
                                                                                                                                                          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kDa surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor (Probable).
                                                                                                                                      SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
QEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                    TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY---
                                                                                                                       NKQGTGTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQIGASLDEQDRKLLEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                     KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [ (Rel. 19, (Rel. 19, I) (Rel. 19, I) (Rel. 34, I)
                                                                                                                                                                                                                                                             159 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     159
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                               20
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsleae;
                                                                                                                                                                                                                                                             16549
                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16581 MW;
                                                                                                                                                                                       33.2%; Score 276.5; DB 1 39.6%; Pred. No. 3.1e-17; tive 27; Mismatches 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34.3%; Score 285; DI
37.9%; Pred. No. 5.66
tive 31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         precursor
                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                           17 KDA SURFACE ANTIGEN, N-ACYL DIGLYCERIDE (PRO; 08973E2648FD8CD8 CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ť
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5; DB 1; I
. 5.6e-18;
tches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                         DB 1;
                                                  RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 159
                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                               (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rickettsial
                                                                                                                                                                                                                           Length 159;
                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γd
                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lipid
                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                       85
                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                        4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
17KD_RICAU
ID 17KD_RICAU
                                                                                                                                                                                                                                           RESULT 6
17KD_RICPA
                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADD DESCRIPTION OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                  P50930;
01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-1996
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIPID
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OMP
                SEQUENCE FROM N.A
                                                NCBI_TaxID=35792;
                                                                                                                       OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-1996
                                                                                                                                                                                                                           17KD_RICPA
                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     141 QTTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                                      G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
20
154
```

```
RRN OCC OCC ORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                       Rickettsia parkeri.
Bacteria; Proteobacteria;
Rickettsiaceae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baird R.W., Ross B.,
Submitted (OCT-1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
STRAIN-MACULATUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                              GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTYRNSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SKIMITALAASMLOACNSPGGMNKOGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSLIIISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                membrane; Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M74042; AAA26394.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    surface antigen precursor (Fragment).
                                                                                                                                               surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS00013; PROKAR_LIPOPROTEIN; 1.
nbrane; Lipoprotein; Antigen; Signal.
1 19 BY SIMILARITY.
20 >154 17 KDA SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                      GQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   australis.
                                                                                                                                                                 (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                       Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           >154
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dwyer B
to the
                                                                                                                                               precursor
                                                                       alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW; E3AA833346FAC320 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B.;
e EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 268;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-ACYL DIGLYCERIDE (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to the outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                           154
                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1; L
L.6e-16;
hes 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                      154
                                                                                           Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               membrane by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
```

```
Or Send ....

EMBL; U11020; AAB07706.1; ..

PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.

Outer membrane; Lipoprotein; Antigen; Signal.

1 19
SIGNAL 1 19
BY SIMILARITY.

20 >154
N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a
                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                          17KD_RICRH STANDARD; PRT; 154 AA.
P50931;
01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                              Rickettsia rhipicephali.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Or Send a...

EMBL; U17008; AAA82040.1; ..

PROSITE; PS00013; PROKAR LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal.
SIGNAL 19 BY SIMILARTTY.
20 >154 17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 -RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 KOERROQYCREFOQKAMIAGQKQEIYGTACPOPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pretzman C.I., Stothard D.R., Ralph D., Clark J.B., Fuerst P.A., Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKIMVIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 259;
Pred. No. 9.
                                                                                                                                                                                                                                        to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .6e-16;
es 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                     С.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
```

```
Qy
                                                               DЬ
                                                                                   Qy
                                                                                                             В
                                                                                                                                  Qy
                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
120 -RNSTGOYCREYTOTVVIGGKOOKAYGNACLOPDGO 154
                    118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                     PROSITE; PSO0013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal.
SIGNAL 1 19 BY SIMILARITY.
CHAIN 20 >154 17 KDA SURFACE ANTIGEN.
LIPID 20 20 N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its mon-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SQ
                                                             64
                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-OHIO 83-441;
Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C.;
Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.

1- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                          ហ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfa
                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia montana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17KD_RICMO
P50929;
                                     GAVLGGOTGAGMDEGDRRLAELTSORALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                         GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                  SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL 63
                                                                                                        SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 GAVLGGQIGAGMDEODRRLABLTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
| ::| :| | ||:||: |:|| :| ||||||||: | ||:||
                                                                                                                                                   1 Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             υı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -RNSTGOYCREYTQTVVIGGKQQKAYGNACLQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSLIIISV---FLYGC--AQNESRQEYGAATGAYYGGYAGQLFGKGSGRYSMAIG-GAYL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          surface antigen
                                                                                                                                                                                                20
20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 Similarity
57; Conserv
                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Proteobacteria; alpha subdivision; Rickettsiales;
aceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 34, Last annotation update)
ace antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                   15881 MW; A09C53B8769E31DA CRC64;
                                                                                                                                                     30.8%; Score 256; 36.5%; Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
15895 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31.1%; Score 259; DB 1; 36.5%; Pred. No. 9.6e-16;
                                                                                                                                             30;
                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OCF85AD5D96DFEFB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                        ..7e-15;
les 53;
                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                            Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53,
                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                    16;
                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
```

```
RESULT 10
17KD_RICCA
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
    RRN OCC OCC RRN
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local !
                                                                                                      17KD_RICCA p29697;
01-APR-1993 (Rel
01-APR-1993 (Rel
01-OCT-1996 (Rel
17 kDa surface a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
SEQUENCE FROM N.A.
MEDLINE-92108069; PubMed-1729713;
                                                      Bacteria; Proteobacteria; Rickettsiaceae; Rickettsia
                                                                                            S
M
P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-MO 85-1084;
Stothard D.R., Ralph
Submitted (JAN-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation updat
                                                                             Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - I- SUBCELLULAR LOCATION: Attached to the outer membrane by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsia amblyommii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P50927;
                                        NCBI_TaxID=788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17KD_RICAM
                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                       œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         anchor (Probable).
                                                                                                                                                                                                                                                                                          GAVLGGQVGAGMDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                    SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                      -RNSTGOYCREYTQTVVIGGKQQKAYGNACRQPDGQ 154
                                                                                                                                                                                                                                                                KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                            SKIMITALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U11013; AAB07704.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 membrane; Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                             Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                 (Rel. 25, Created)
(Rel. 25, Last sequence update)
(Rel. 34, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                  154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
20
154
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                        antigen
                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                      Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           >154
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                  15879
                                                                                                                                                                                                                                                                                                                                                                                                            30.6%;
36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D.A., Clark J.B., Fuerst P.A., Pretzman to the EMBL/GenBank/DDBJ databases.
                                                                                                        (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MW.
                                                      alpha subdivision;
sae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                              29;
                                                                                                                                                                                                                                                                                                                                                                                                     Score 255; Db 1,
No. 2.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 2.1e
9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.
17 KDA SURFACE ANTIGEN
N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antigen;
                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  E4FBE4C29D943581 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal.
                                                                                                                   update)
                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                54.
                                                                  Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                              6;
```

```
RESULT 11
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                     01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last seq)
15-DEC-1998 (Rel. 37, Last announce membrane lipoprotein pcp PCP OR PCPY.
                                                                                                                                                                                                                                                                                                                                                                                                                                               PCP_YEREN P31484;
                       This SWISS-PROT entry is copyright. It is produced through a chetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-slb.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                         uptake
J. Bact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        typhus-like rickettsia found in cat fleas.";
Proc. Natl. Acad. Sci. U.S.A. 89:43-46(1992).
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by
                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-ATCC 51872 / WA-C / SEROTYPE
MEDLINE-92121089; PubMed-1732192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Azad A.F., Sacci J.B. Jr., Schmidtmann E.T., Carl M.;
EMBL; X60448; CAA42977.1;
                                                                                                                                                    <del>:</del>
                                                                                                                                                                              -!- SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                   Baeumler A.J., Hantke K.; "A lipoprotein of Yersinia enterocolitica"
                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                             Yersinia enterocolitica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Outer membrane; Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000437; Prok_lipoprot
PROSITE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M82879; -;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Genetic characterization and transovarial transmission
                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=630;
                                                                                                                                                                                            take in Escherichia coli.";
Bacteriol. 174:1029-1035(1992).
- FUNCTION: FACILITATES FERRIOXA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42 GQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _
                                                                                                                                      H. INFLUENZAE PCP.
                                                                                                                                                  SIMILARITY: TO E.COLI AND
                                                                                                                                                                   anchor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NPDNGNYGYVTPSKTYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPDTGNSYSVEPVRTYQ 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSQFGKGKGQLIGVGAGALLGAILGNQIGAGMDEQDRRLAELTSQRALETTPSGTSIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
8372 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .B. Jr.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77
                                                                                                                                                                              FERRIOXAMINE UPTAKE. Attached to the oute
                                                                                                                                                                                                                                                                                                                                                gamma subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                       annotation
                                                                                                                                                                                                                                                                                                                                                                                                                    sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nelson W.M., Dasch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 156; DB 1;
Pred. No. 3.9e-07;
5; Mismatches 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AD289A48EAB19E0E CRC64;
                                                                                                                                                    S.TYPHIMURIUM SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                       otation update) precursor.
                                                                                                                                                                                                                                                                             0:8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                                                                                                               the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                      facilitates
                                                                                                                                                                                                                                                                                                                                                  Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                    AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                    TO
                                                                               restrictions
                                                                                                                                                                                                                                      ferrioxamine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of.
                                                                                                                                                                               ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a collaboration
                                                  for
                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a lipid
                                                                                              collaboration -
                                        .ch/announce/
                                                                                            outstation
                                                                                                                                                                               lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                    n no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ဝ္ဗ
                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
```

4;

```
SESULT 12
SIVB_SALTY
AC 053549,
DT 01-NOV-
D
SEQUENCE FROM N.A.

SPECIES=S.typhi; STRAIN-CT18;
MEDLINE=21534947; pubMed=11677608;
MEDLINE=21534947; pubMed=11677608;
Parkhill J. Dougan G. James K.D., Thomson N.R., Pickard D., Wain Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M.Bakar S., Basham D., Brooks K., Chillingworth T., Connerton F., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DR DR KW FT FT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                           Nature 413:852-856(2001).
                                                                                                                                                                                                                                                                                                                                               McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney B., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPECIES=S.typhimurium; STRAIN=LT2 / SGSC1412 / ATCC 700720; MEDLINE=21534948; PubMed=11677609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES=S.typhimurium;
MEDLINE=96133688; PubM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              haemolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; gamma subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Salmonella typhimurium,
Salmonella typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Outer membrane lipoprotein slyB precursor.
SLYB OR STM1445 OR STY1677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SLYB_SALTY
Q53549;
Q1-NOV-1997
Q1-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; S23787; S23787.

HSSP; PO0778; 1P04.

PROSITE; PS00013; PRO;
Outer membrane; Lipopx
SIGNAL 1 17
CHAIN 18 155
LIPID 18 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    127 VQKQGPTRFSVGQ~~RVMLASSGSTVTVSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34 GAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gen. Genet.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --NOSLEKVKAGOVTRWRNPDTGNSYSVEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P: POO778; IP04
SITE; PS00013; PROKAR_LIPOPROTEIN; 1.
er membrane; Lipoprotein; Signal.
NAL 1 POTENVIAL.
IN 18 155 OUTER WHARAN
ID 18 15 N-ACYL DIGLYC
UENCE 155 AA; 15362 MW; BAD6BE2132E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGQGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AVAĪAAVTLIGCĀNNNTLSGDVESASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVMGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SLIIISVFLVGCAQN------FSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 regulatory protein from Salmonella typhimurium, induces
ic and pore-forming protein in Escherichia coli.";
. Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133688; PubMed=8544813;
Tengel C., Bauer S., Bubert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13.5%;
24.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 112.5; |
Pred. No. 0.00.
19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OUTER MEMBRANE LIPOPROTEIN PCP.
N-ACYL DIGLYCCRIDE (POTENTIAL).
3 8AD6BE2132E849FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154
                                                                                                                                                                                                                                                                                                                        enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A., Benz R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .0044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mollenkopf H.-J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---VGAAT 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51;
                                                                                                                                                            J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66
```

,

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Per
Riley M., Collado-Vides J., Glasner J.D., Rode,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden
                                                          Ludwig A., Tengel C., Daue. ...,
Goebel W.;
"SlyA, a regulatory protein from Salmonella typhimurium, induces haemolytic and pore-forming protein in Escherichia coll.";
Mol. Gen. Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                           SLYB_ECOLI STAN
P55741; P76183;
O1-NOV-1997 (Rel. 3
O1-NOV-1997 (Rel. 3
16-OCT-2001 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                             SEQUENCE FROM N.A. MEDLINE=96133688; Ludwig A., Tengel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                               01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation updato)
outer membrane lipoprotein slyb precursor.
SLYB OR B1641 OR Z2655 OR ECS2350.
                                                                                                                                                                                           NCBI_TaxID=562, 83334;
                                                                                                                                                                                                            Escherichia coli, and Escherichia coli 0157:H7. Bacteria, Proteobacteria, Escherichia.
                                                                                                                                                                                                                                                                                                                                                ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stydene; SG10573; slyB.

PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1

Outer membrane; Lipoprotein; Signal; Co
POTENTIAL TO POTENT TO PO
                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                     102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a continuous the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib.or cor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MRGCLQGSSL------IIISVFLVGCAQNFSRQEVGAATGAYVGGVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Complete genome sequence of a enterical servovar Typhi CT18.";
Nature 413:848-852(2001).
-!- SUBCELLULAR LOCATION.
                                                                                                                                                                                                                                                                                                                                                                                    GNTIMVVQKQGNTRFSAGQR 140
                                                                                                                                                                                                                                                                                                                                                                                                           GNSYSVEPVRTYQRYNKQER 121
                                                                                                                                                                                                                                                                                                                                                                                                                                            GQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDT
                                                                                                                                                                                                                                                                                                                                                                                                                           GNTIGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LAĞCVNNDSLSGDVYTASEAKQVQNVTYGTİVNVRPVQIQGGDDSNVIGAIGGAVLGGFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anchor (Potential). Account to the outer membing SIMILARITY: TO E.COLI SLYB, H.INFLUENZAE PCP AND PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
18
                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                     PubMed=8544813;
C., Bauer S., Bubert A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 OI
18 N
; 15548 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.7%;
                                                                                                                                                                                                                gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20;
                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 105.5; DB
Pred. No. 0.018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OUTER MEMBRANE LIPOPROTEIN N-ACYL DIGLYCERIDE. ROE4; 82FDDCDCBABD55A7 CRC64;
                                                                                                                                                                                                           subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              multiple
                                                                                                                                                                                                                                                                                                                       155
                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Complete proteome
  Goeden M.A.,
                                                                                                                                                                                                                                                                                                                     A
      Perna N.T., Burland V., ode C.K., Mayhew G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   drug resistant Salmonella
                                                                                                                                                                                                    Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53;
                                                                                                                           Mollenkopf H.-J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y.ENTEROCOLITICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                         b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
```

?,

```
밁
                    Ş
                                                         Query Match
Best Local S
Matches 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-0157:H7 / RIMD 0509952:
MEDLINE-21156231; PubMed-11258796;
Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoy Hayashi T., Makino E., Nakayama K., Murata T., Tanaka M., Tobe I.da T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunau Kuhara S., Shiba T., Hattori M., Shinagawa H.;
"Complete genome sequence of enterchemorrhagic Escherichia coli 0157:H7 and genomic comparison with a laboratory strain K-12.";
DNA Res. 8:11-22(2001).
                                                                                                                    CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kikpatrick H.A., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner F.R.; "Genome sequence of enterohaemorrhagic Escherichia coli O157:H7." "Genome sequence of enterohaemorrhagic Escherichia coli O157:H7."
                                                                                                                                                                                                                                                            EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Itoh T., Kasai H., Kashimoto K., Kimura S., Kitakawa M., Kitagawa M., Makino K., Miki T., Mizobuchi K., Mori H., Mc Motomura K., Nakade S., Nakamura Y., Nashimoto H., Nishio Oshima T., Saito N., Sampei G., Seki Y., Sivasundarram S., Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C., Yamamoto Y., Horiuchi T.; Yamamoto Y., Horiuchi T.; "A 570-kb DNA sequence of the Escherichia coli K-12 genome corresponding to the 28.0-40.1 min region on the linkage m DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                                                 use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                 This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature
[5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-0157:H7 / EDL933 / ATCC 700 MEDLINE-21074935; PubMed-11206551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. STRAIN=0157:H7 / F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97251357; PubMed=9097039;
Alba H., Baba T., Fujita K., Hayashi K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science
                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                 Outer
                                                                                                                                                                                                                                                                                                                                                                                                    between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
10
                              12
                                                                                                                                                                                                                                                                                                                                                                   s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: TO S.TYPHIMURIUM SLYB, H.INFLUENZAE Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anchor (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complete genome sequence nce 277:1453-1474(1997).
MVGLSLVGCVNNDTLSGDVYTASEAKQVQNVSYGTIVNVRPVQIQGGDDSNVIGAIGGAV
                            IISVFLVGCAQN-----FSRQE---
                                                                                                                                                                                                                                           AE000259; AAC74713.1; -. D90807; BAA15402.1; -. AE005387; AAG56630.1; -. AP002558; BAB35773.1; -.
                                                                                                                                                                                                 membrane;
                                                                         Similarity
                                                                                                                                                                                                       EG13409; slyB.
PS00013; PROKAR_LIPOPROTEIN; 1.
                                                                                                                 18
18
98
155
                                                           Conservative
                                                                                                                       A
A
                                                                                                                                                                                                 Lipoprotein;
                                                                                                               155
18
98
15602
                                                                      12.6%;
                                                                                                                       MW;
                                                         21;
                                                                                                                    1; Signal; Complete proteome.
POTENTIAL.
OUTER MEMBRANE LIPOPROTEIN S
N-ACYL DIGLYCERIDE.
A -> T (IN REF. 2).
A -> 543EBBA4069A5FA3 CRC64;
                                                                       Score 104.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      700927;
                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Inada T., Is
S., Kitakawa
                                                                         .021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 coli K-12 genome on the linkage m
                                                                                         DВ
                                                           42;
                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            membrane
                                                                                    Length
                            ----VGAATGAV
                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coli 0157:H7.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isono
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCP
                                                                                                                                                                   SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yasunaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yokoyama
Tobe T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ×
                                                           49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                         Gaps
                            36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ζ.
                                                         4
```

```
RESULT 14

PREFIL

RA DEICH

RA DEICH

RA MEDLI

RA SCOKE

RA Weid

RA Weid

RA Weid

RA SCOKE

RA Gneh

RA SCOKE

RA Gneh

RA FIEL

CCC -!-

CCC -!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
Outer membrane;
SIGNAL 1
CHAIN 19
LIPID 19
CONFLICT 135
SEQUENCE 155 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-95350630; PubMed-7542800;
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Merrick J.M.,
Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,
Weidman J.F., Phillips C.A., Spriges T., Hedblom E., Cotton M.D.,
Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,
Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,
Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
Yenter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDLINE-88115138; PubMed-2828309;

MEDLINE-88115138; PubMed-2828309;

Deich R.A., Metcalf B.J., Finn C.W., Farley J.B., Green B.A.;

"Cloning of genes encoding a 15,000-dalton peptidoglycan-associated

"Cloning of genes encoding a 15,000-dalton peptidoglycan-associated

outer membrane lipoprotein and an antigenically related 15,000-dalton
protein from Haemophilus influencae.";

J. Bacteriol. 170:489-498(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCP_HAE
P10325;
                                                                                                                                                                                                                                                                                                   use by non-profit institutions as young modified and this statement is not remove entities requires a license agreement (Se or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cross-reacting lipoprotein).
PCP OR LPP OR HI1579.
Haemophilus influenzae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1995 (Rel. 16-OCT-2001 (Rel:
                                                                                                                                                                                                                  PIR; B28543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Whole-genome random sequencing
influenzae Rd.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-RD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _HAEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: TO E.COLI
Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor
                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---DDGNTIMVVQKQGNTRFSPGQR 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VGGVAGQLFGKGSGRVSMAIGGAYLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LGGFLGNTVGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK----
                                                                                                                                                                                                                                       M18877; AAA24938.1;
U32832; AAC23228.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           269:496-512(1995).
                                                                                                                                pS00013; pROKAR_LIPOPROTEIN;
mbrane; Lipoprotein; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM N.A.

KW20 / ATCC 51907
                                                                                                                                                                                                                  B28543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         el. 10, Created)
el. 32, Last sequence update)
el. 40, Last annotation update)
lipoprotein PCP precursor (15 kDa lipoprotein) (PAL
                                                                                                                     Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E.COLI AND
        15425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gamma
        ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Attached to
                                                                                                                                                                                                                                                                                                                                                                        is not removed.
                                                                                                                                                                                                                                                                                                                                               agreement (See http://www
                              N-ACYL DIGLYCERIDE CSLVAEFVF -> VAGRR
                                                                                 OUTER MEMBRANE LIPOPROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S.TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subdivision; Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assembly of Haemophilus
                                                                                                                                     Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                              VAGRRVRI (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLYB
                                                                                                                                                                                                                                                                                                                                                                     Usage
                                                                                                                                  proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                        bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                               .isb-sib.
                              REF. 1)
                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                    PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bу
                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ಬ
                                                                                                                                                                                                                                                                                                                                               .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lipid
                                                                                                                                                                                                                                                                                                                                                                        ons on its in no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96
```

```
TO DE STORY OF STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET STREET S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
YCFJ_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/orsend an email to license@isb-sib.ch).
EMBL; AE000211; AAC74194.1; -.
EMBL; D90746; BAA35925.1; -.
EMBL; V00306; -; NOT_ANNOTATED
                                                                                                                                                                                                                                                                                                                                      IDENTIFICATION.

MEDLINE-95075659; PubMed=7984428;

Borodovsky M., Rudd K.E., Koonin E.V.;

"Intrinsic and extrinsic approaches for detecting genes bacterial genome.";

bacterial genome. 22:4756-4767(1994).

Nucleic Acids Res. 22:4756-4767(1994).
                                                                                                                                                                                                                                                                                                                   Nucleic acids Res. 22:4756-4767(1994).
-!- SIMILARITY: TO RICKETTSIA 17 kDa SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-97061202; pubMed-8905232;
Oshima T., Aiba H., Baba T., Fujita K., Hayashi K., Honjo A.,
Ikemoto K., Inada T., Itoh T., Kajihara M., Kanai K., Kashimoto K.,
Kinara S., Kitagawa M., Makino K., Masuda S., Miki T., Mizobuchi K.,
Mori H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Saito N.,
Sampei G., Seki Y., Tagami H., Takemoto K., Wada C., Yamamoto Y.,
Yano M., Horiuchi T.;
"A 718-kb DNA sequence of the Escherichia coli K-12 genome
corresponding to the 12.7-28.0 min region on the linkage map.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Young J.G., Rogers B.L., Campbell H.D., Jaworowski A., Shaw D.C., "Nucleotide sequence coding for the respiratory NADH dehydrogenase of Escherichia coll. UUG initiation codon.";

Eur. J. Blochem. 116:165-170(1981).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=81236546; PubMed=6265208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1-63 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-KI2 / MG1655;
MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Pluhkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YCFJ_ECOLI STANDARD; PRT; 179 AA. P37796; P75951; 01-OCT-1994 (Rel. 30, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) Hypothetical protein ycfJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complete genome sequence of Escherichia coli K-12."; nce 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 101; DB 1;
Pred. No. 0.043;
9; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
Search completed: October 27, 2002, Job time: 6.83938 secs
                                                                                        QΥ
                                                                 В
                                                                                                                       Ъ
                                                                                                                                                   δÃ
                                                                                                                                                                               Ър
                                                                                                                                                                                                        QУ
                                                                                                                                                                                                                                                                                                 SQ SQ
                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                           ECOGENE; EG12444; ycfJ.

Hypothetical protein; Transmembrane; Complete proteome.

TRANSMEM 5 25 POTENTIAL.

SEQUENCE 179 AA; 18920 MW; BASEBODRAGAGGG COCCA.
                                                               163
                                                                                          145
                                                                                                                       121
                                                                                                                                                   90
                                                                                                                                                             73 GSVLGAVAGGVIGHQFGGGRGKDVATVVGALGGGYAGNQIQGSLQESD------
                                                                                                                                                                               30 GAATGAVVGGVAGOLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 89
                                                                                                                                                                                                                                                 Local Similarity
                                                           TQIPL-DSNGQLILNNK
                                                                                   TACPQPDGRWQVISTEK
                                                                                                     --------TYTTTQQRCKTVYDKSEKMLGYDVTYK----IGDQQGKIRMDRDPG 162
                                                                                                                               AGOVTEWENPDTGNSYSVEPVETYQEYNKQERRQQYCREFQQKAMIAGQKQEIY-----G 144
                                                                                                                                                                                                                                      36;
                                                                                                                                                                                                                               12.0%; Score 100; DB 1; Length 179; larity 26.3%; Pred. No. 0.061; Conservative 17; Mismatches 48; Indels
                                                                                                                                                                                                                                                                                       18920 MW;
                                                         178
                                                                                     161
                                                                                                                                                                                                                                                                                 BA5EB0DB56D45609 CRC64;
                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                            48;
                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                         36;
                                                                                                                                                                                                                     Gaps
                                                                                                                                                              120
```

4;

10:56:30

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw mode.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
     Pred. No.
                                                                                                                                                                                                                                                            288
285
285
285
276.5
276.5
120.5
112.5
111.5
111.5
110.9
109
107.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
   103
103
100.5
100.5
100
100
99.5
                                                                                                                                                                105.5
104.5
104.5
104.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NO. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     October 27, 2002, 10:56:01; Search time 10.5665 Seconds (without alignments) 1464.098 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-677-374-4
832
1 MRGCLQGSSLIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        283138 segs, 96089334 residues
   113.5
113.4
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
113.1
                                                                                                                                                                                                                                                                                                                                                                                                           33.2
15.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR_71:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MRGCLQGSSLIIISVFLVGC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                      DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                             D33971
B33971
A33971
G97860
                                                       F90922
B85771
S58234
AG0443
AD3350
I64130
F87413
C64855
                                                                                                                                                                                                                                                                                              B83514
AE0644
G87629
B82837
                                                                                                                                                                                                                     D97478
                                                                                                                                                                                                                                                            AD2696
AF0289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IJ
                                                                                                                                                                                                                                                                                                                                                                                        AI3418
                                                                                                                                                                                                                                                                                                                                                                                                           D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283138
                                                                                                                                                                               lipA protein (impo probable lipoprote lipA protein (impo outer membrane lip outer membrane lip probable outer mem
hypothetical prote
hypothetical prote
hypothetical prote
                                                                                         outer membrane pro
PAL cross-reacting
                                                                                                                            probable outer mem
lipA protein - Rhi
outer membrane lip
                                                                                                                                                                                                                                                                                          conserved hypothet
                                                                                                                                                                                                                                                                                                             conserved hypothet
probable secreted
hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                       outer membrane lip
                                                                                                                                                                                                                                                                                                                                                                                        conserved hypothet
17K surface antige
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                     hypothetical prote
ycfJ protein - Esc
                                                                                                                                                                                                                                                                                                                                                                                                                          17K antigen precur
                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsial
17K surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rickettsial common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161
                                                                                                                                                                                                                                                                                                                                                                                                                                               common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                antige
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     common
```

ALIGNMENTS

R;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antigen gene.
A;Reference number: A3971; MUID:89359171
A;Accession: D33971
A;Status: preliminary

rickettsial common antigen precursor - Rickettsia prowazekii N;Alternate names: 17kD surface antigen; outer membrane protein (omp); RP833 C;Species: Rickettsia prowazekii C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000. C;Accession: D33971; B71645

A;Cross-references: GB:M28482; NID:g152461
A;NOte: the sequence in Genbank entry RIRANT17KC, release 109.0, (PID:g152462) omits R;Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsmark Nature 396, 133-140, 1998

A; Molecule type: DNA A; Residues: 1-159 <AND> RESULT 1 D33971

```
RESULT 2
B33971
Rickettsial common antigen precursor -
                                                                                                                                                                             р
                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: The genome sequence of Rickettsia prowazekii and the origin A;Reference number: A71630; MUID:99039499 A;Accession: B71645
                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-159 <AN2>
                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: omp; RP833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain Madrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                      ;Superfamily: rickettsial common antigen ;Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics:
                                                                                                                                          118
                                                                                                       120
                                                                                                                                                                               64
                                                                                                                                                                                                                                                      Ģ
                                                                                                                                                                                                                                                                                          œ
                                                                                                                         GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                  SKIMITALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL 63
                                                                                                       -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                        SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                             Similarity
61; Conserv
                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                           34.6%; Score 288; DB 2; 1
37.9%; Pred. No. 1.7e-18;
tive 32; Mismatches 52;
             Rickettsia conorii
                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                              Length 159;
                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of mitochondria
                                                                                                                                                                                                                                                                                                                               6
```

```
17K surface antigen precursor [imported] - Rickettsia conorii (strain Malish C:Species: Rickettsia conorii (conorii C:Species: Rickettsia conorii (conorii C:Abte: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C:Accession: 697860 R:Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; SarFience 293, 2093-2098, 2001
                                                                                                                       RESULT 4
G97860
                                                                                                                                                                                         В
                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                         ДЪ
                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsial common antigen precursor - Rickettsia rickettsii C;Species: Rickettsia rickettsii C;Species: Rickettsia rickettsii C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_chan C;Accession: A33971
R;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rick A;Accession: A33971
A;Accession: A33971
                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:M28480; NID:g152457; PIDN:AAA26376.1; PID:g152458
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
A33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Species: Ricket
C; Date: 16-Mar-10
C; Accession: B33
R; Anderson, B.E.;
J. Bacteriol, 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C: Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross_references: GB:M28479; NID:g152463; PIDN:AAA26379.1; PID:g152464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N: Adderson, B.E.; Tzianabos, T.

J. Bacteriol. 171, 5199-5201, 1989
A; Title: Comparative sequence analysis of A; Reference number: A33971; MUID: 89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;Species: Rickettsia conorii
;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 20-Aug-1999
                                                                                                                                                                                         120
                                                                                                                                                                                                118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                             64 GAVLGGOIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                    Ģ
                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120 -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118 KQERROQYCREFOOKAMIAGQKQEIYGTACDQDDGRWQVIS 158
                                                                                                                                                                                                                                                         GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                   -RNSTGOYCREYTOTVVIGGKOOKAYGNACROPDGOWQVVN 159
                                                                                                                                                                                                                                                                                          SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                        SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                            61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAVLGGOIGAGMDEODRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGOSMDOODK----IKLNOSLEKVKAGOVTHWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSLIIISV---FLVGG--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                              34.3%; Score 285; DB 2; I
37.9%; Pred. No. 3.1e-18;
tive 31; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34.3%; Scr
37.9%; Pro
ative 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 285;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
.1e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53;
                                                                                                                                                                                                                                                                                                                                                                                          Length 159;
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
            Barbe, V.; Samson,
                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
            D.;
 _ RC
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                              ρy
```

```
C/Accession: A25972
R:Anderson, B.E.; Regnery, R.L.; Car
J. Bacteriol. 169, 2385-2390, 1987
A;Title: Sequence analysis of the 17
A;Reference number: A25972; MUID:877
A;Accession: A25972
                                                                                                                                RESULT 6
A25972
17K antigen <sub>I</sub>
                                                                          17K antigen precursor - Rickettsia rickettsii
C:Species: Rickettsia rickettsii
C:Date: 21-May-1988 #sequence_revision 21-May-1988 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsial common antigen precursor - C; Species: Rickettsia typhi
C; Date: 16-Mar-1990 #Sequence_revision
C; Accession: C33971
C; Anderson, B.E; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross references: GB:M28481; NID:g152459; PIDN:AAA26377.1; C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of
A;Reference number: A33971; MUID:89359171
A;Accession: C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: omp
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:AE006914; PIDN:AAL03825.1; PID:g15620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia A;Reference number: A97700; MUID:21442074; PMID:11557893
A;Accession: G97860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-159 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                               141
                                                                                                                                                                                                                                140 QEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                                                                                        08
                                                                                                                                                                                                                                                                                                                                  25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 79
                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                   QTTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                             TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY--
                                                                                                                                                                                                                                                                             KLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYORYNKOERROOYCREFOOKAMIAGOK 139
                                                                                                                                                                                                                                                                                                             NKÓGTGTLLGGAGGALLGSOFGHGKGOL-VGVGVGALLGAVLGGOTGASLDEQDRKLLEL 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYYTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSLIIISV---FLVQC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                      Similarity 39.6
55; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
             A25972; MUID:87222152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34.3%;
                                                  Carlone, G.M.; Tzianabos, T.;
                                                                                                                                                                                                                                                                                                                                                                                        27;
          17-kilodalton-antigen gene from Rickettsia ricketts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31;
                                                                                                                                                                                                                                                                                                                                                                                              Score 276.5; DB 2
Pred. No. 1.8e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 285; DB 2;
Pred. No. 3.1e-18;
                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-Mar-1990 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genus-common
                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                    -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                    46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                               Indels 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rickettsial antigen
                                               McDade, J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID: g152460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          prowazekii
                                             Fu,
                                                                                                                                                                                                                                                                                                                                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                             Z . Y .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6,
```

```
A; NOTES PRESENTED IN A; A; Status: preliminary
A; Status: preliminary
A; Molecule type: DNA
A; Residues: I-182 < STO>
A; Cross-references: GB: AE004799; GI
A; Cross-references: GB: AE004799; GI
                                                                                                                                                                                                                                    RESULT 8
A13418
17K surface antigen precursor [imported] -
17K surface: Brucella melitensis
                                                                                            R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, E. Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella A;Reference number: AD3252; PMID:11756688
                                                                                                                                                                                                                   C:Species: Brucella melitensis
C:Date: 01-Feb-2002 #sequence_revision 01-Feb-2002
C:Accession: AI3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source: C; Genetics: A; Gene: PA3819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Complete genome sequence of Pseudomonas aeruginosa A;Reference number: A82950; MUID:20437337 A;Accession: D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R:Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, LOTY, S.; Olson, M.V.; LOCY, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000
C;Accession: D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
D83169
A; Molecule type: DNA
A; Residues: 1-131 <KUR>
A; Cross-references: GB: AE008917; PIDN: AAL52516.1;
A; Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conserved hypothetical protein PA3819 [imported] -
C; Species: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:M16486; NID:g152467; PIDN:AAA26381.1; PID:g152468 C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues: 1-159 <A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                                                                                                                                                                                                                                                                                                                                                                                             -KLNQSLEKV------KAGQVTRWRNP 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QIAGTAIGAVVGGLLGNQIGGGTGKKIATVAGAVGGGYAGNKVQEGMQERDTYTTETRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                     STVHDSSEKVVGYDVKYMLDGKAGQIRMERDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -RNSTGQYCREYTQTVVIGGKQQKAYGDACRQPDEQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15.3%;
ilarity 34.8%;
Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB:AE004091; NID:g9949981; PIDN:AAG07206.1; GSPDB:GN00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 127.5; DB 2;
Pred. No. 0.00037;
3; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 276; DB 2
Pred. No. 2e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                  Brucella melitensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54;
                    PID:g17983328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #text_change 31-Dec-2000
                                                                                                                                                                                                                                        #text_change 01-Feb-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PA01,
                                                                                                                                                                                                                                                                                  (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                    GSPDB:GN00190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              an opportunistic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                        Brucella meliten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                              D.; Letes
                                                                                                                                                                                                     Ivanova,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAO1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pathq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .; Br
Lim,
```

A;Status: preliminary A;Molecule type: DNA A;Residues: 1-154 <570>

A;Cross-references: GB:AE004537; GB:AE004091; A;Experimental source: strain PAO1

NID: g9946960;

PIDN: AAG04442.1;

GSPDB

aeruginosa

PA01,

an

opportunistic

pa

```
outer membrane lipoprotein precursor - Yersinia en C;Species: Yersinia entercolitica C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 C;Accession: S23787 R;Baeumler, A.J.; Hantke, K. J. Bacteriol. 174, 1029-1035, 1992 J. Bacteriol. 174, 1029-1035, MUID:92121089 A;Reference number: S23786; MUID:92121089
.; Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
A;Title: Complete genome sequence of Pseudomonas A;Reference number: A82950; MUID:20437337
A;Accession: B83514
                                                                                 C;Accession: B83514
R;Stover, C.K.; Pham, X.Q.; Erwin, adman, S.; Yuan, Y.; Brody, L.L.;
                                                                                                                                   conserved hypothetical protein PA1053 [imported] - C;Species: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000
                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 1-155 <BAE>
A;Cross-references: EMBL:X60448; NID:g48577; PIDN:CAA42977.1;
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                            в83514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: BMEI1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  152 GRW 154
                                                                                                                                                                                                                                                               127
                                                                                                                                                                                                                                                                                             82 -- NQSLEKVKAGQVTRWRNPDTGNSYSVEP 109
                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                             34 GAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 KSVLWSGAGS-NAGDVTAAQPYQ-----VGSQNCRQYSHSFTIGGDQQTVRGTACRNPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 QVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14 GKGSGFPS--LGGSSQKPETNLLASLGNGLFGNSASQLSAADRRKALEAEYRALEYSPAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46 GKGSGRVSMAIGG------AVLG-GLIGSKIGQ--SMDQQDKIKLN-QSLEKVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 39; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                 7 AVAIAAVTLTGCANNNTLSGDVFSASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVMGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                             GAVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGQGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                   SLITISVFLVGCAQN-----FSRQE-----
                                                                                                                                                                                                                                                              VQKQGPTRFSVGQ -- RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14.5%;
31.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 112.5; DB Pred. No. 0.0068; 9; Mismatches 4
                                                                                     Coulter, S.N.; Folger, K.R.; Kas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 120.5; DB Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                      15-Sep-2000 #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yersinia enterocolitica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-Nov-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          facilitates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44;
                                                                                                                                                                        Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                   -------VGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g48579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ferrioxamine uptake
                                                                                                                                                                                                                                                                                                                                                                 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-Sep-1999
                                                                                       Α.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                     Hickey,
Larbig,
                                                                                                                                                                          (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                       K.j.;
                                                                                                                                                                              PAO
```

C;Genetics: A;Gene: PA1053

```
R; Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Ne. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Sh. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001 A. Title: Complete Genome Sequence of Caulobacter or.
                                                                                                                                                    hypothetical protein CC3073 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C;Accession: G87629
                                                                                                                                                                                                                                                                G87629
                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                          Reference number: A87249;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: STY125;
C;Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.;
A;Title: Complete genome sequence of a multiple d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross:references: GB:AL513382; PIDN:CAD08336.1; PID:g16502381; GSPDB:GN00176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-179 <PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Probable secreted protein STY1252 [imported] - Salmonella enterica subsp. enterica serov C;Species; Salmonella enterica subsp. enterica serovar Typhi
A;Note: this species has also been called Salmonella typhi
C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 14-Dec-2001
C;Accession: AE0644
R;Parkhill, J; Dougan, G; James, K.D.; Thomson, N.R.; Pickard, D; Wain, J; Churcher, th, T; Connerton, P; Cronin, A.; Davis, P; Davies, R.M.; Dowd, L.; White, N.; Farrar,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: PA1053
C;Superfamily: PAL
                                                                                                                                                                                                                                                                                                                      165 IPL-DGNGQLVLNNK 178
                                                                                                                                                                                                                                                                                                                                                    147 CPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                            90 AGQVTRWRNDDTGNSYSVEPVRTYQRYNKQERRQQYCREFQ---QKAMIAGQKQEIYGTA 146
                                                                                                                                                                                                                                                                                                                                                                                                                                        73 GSVLGAVAGGVIGHQFGGGRGKDVATVVGALGGGYAGNQIQGSNQESD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                       30 GAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 STRAYVOOVDOGQIFR 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ட
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --NOSLEKVKAGOVTR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGSIAGAGVGGVAGSAVGGGKGSYVAATIGAVAGGLLGAATEEGLTRTQGVEITVREDDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MRKSALIVASFTAMALALGGCQSSLTGDTYSREEARTVQTVRNGTIQALRPVKIEGTKTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LQGSSLIIIS-----VFLVGC-----AQNFSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 25.7
35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                               -TYTTTQQRCKTVYDKSEKMLGYDVTYKIGDQQGKIRMDKDP--GTQ 164
                                                          quence of Caulobacter crescentus.
MUID:21173698; PMID:11259647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.1%; Score 109; DB 2;
27.4%; Pred. No. 0.016;
tive 16; Mismatches 5(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13.4%; C
25.7%; Prec
21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 111.5;
Pred. No. 0.(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                         Nelson, K.E.; Eisen, J.; Heidelberg, J.;
in, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon
Shapiro, L.; Venter, J.C.; Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.0083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         drug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simmonds, M.;
drug resistant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Skelton, J.; Stevens, K. Salmonella enterica sero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
lipA protein [imported] - Agrobacterium tumefaciens (strain C58, Dupont) C;Species: Agrobacterium tumefaciens (C;Species: Agrobacterium tumefaciens (C;Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 11-Jan-2004, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; (Cerage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Karp, P.; Romero, P.; Zhang, S.
                                                                                                                                                          RESULT 14
AD2696
                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                Дb
```

Matches

105 GTAIGALIGGLYGNOFGHGNGRKALTAAGAVAGGFIGNEV 144

11-Jan-2002 #text_change 11-Jan-2002

D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo D.; Kutyavin, T.; Levy, R.; Li, M.; MCCL

30 GAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKI 69 | | ||::||: | || ||:|| :: ||| || ||:|:

9,

Mismatches

12;

Indels

0;

Gaps

0

Length 257;

```
A; Experimental Source: Strain 9a5c

R; Simpson, A.J.G.; Reinach, F.C.; Airuda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R

Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer

Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer

Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer

Briones, M.R.S.; Bueno, M.R.P.; Facincani, A.P.; Ferreira, A.J.S.

J.D.; Jungueira, M.L.; Kemper, E.L.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Franthors: Martins, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; La

F.G.; Munqueira, M.L.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins

Rodrigues, V.; Rosa, A.J. de M.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri,

A; Nuthors: Ga Silva, A.C.R.; da Silva, F.R.; da Silva, R.G.; Santelli, R.V.; Sawa

A: Reference number: A50378

A: Reference number: A50378
                                                                                                             A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:AE003872; GB:AE003849; NID:g9104975; PIDN:AAF82991.1; GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-257 <SIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Accession: B82837 """"" Revision 20-Aug-2000 #text_change 20-Aug-20 R;anonymous, The Xylella fastidiosa Consortium of the Organization for No A;Title: The genome sequence of the plant pathogen xylella fastidiosa. A;Reference number: A82515; MOID:20365717 A;Note: for a complete list of authors see reference number A59328 below A;Accession: B82837.
                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         conserved hypothetical protein xF0178 [imported] - xylella fastidiosa (strain C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:AE005673; NID:gl3424723; PIDN:AAK25035.1; GSPDB:GN00148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-232 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: G87629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genetics:
Gene: CC3073
Local Similarity 47.5 hes 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                           XF0178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141 AAQEVGGIYKSGGFRYAQTVQAAPLVKIEKKMVTR 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 VVGCKASGKKQEVGAVVGALLGAAAGSNLAKNDQGTGTAIGAVVGAGAGSLIGCKMQKSD 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74 DQQDKIKLNQS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 LVGCAQNFSRQEVGAATGAVVGGVAGQLFGK---GSGRVSMAIGGAVLGGLIGSKIGQSM 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                    13.18;
47.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13.18;
          Score 109; DB 2;
Pred. No. 0.024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Score 109; DB 2;
; Pred. No. 0.021;
14; Mismatches 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -LEKVKAGOVTR 95
                              DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleotide Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9a5c)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
```

```
C:Genetics:
A;Gene: slyB
C:Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       probable lipoprotein slyB [imported] - Yersinia pestis (strain CO92)
C;Species: Yersinia pestis
C;Species: Yersinia pestis
C;Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Accession: AF0289
C;Acces
                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-155 <KUR>
A;Cross-references: GB:AL590842; PIDN:CAC91178.1; PID:g15980369; GSPDB:GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Genome sequence of Yersinia pestis, the causative agent of plague. A;Reference number: AB0001; MUID:21470413; PMID:11586360 A;Accession: AF0289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58. A;Reference number: AB2577; PMID:11743193 A;Accession: AD2696 A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm, ster, E.W.
Search completed: October 27, 2002, 10:58:40 Job time : 11.5665 secs
                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Genetics:
A;Gene: lipA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:AE008688; PIDN:AAL41986.1; PID:g17739358; GSPDB:GN00186 A;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-142 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 12.9%; Score 107.5; DB 2; Length 142; Best Local Similarity 27.2%; Pred. No. 0.017; Matches 41; Conservative 20; Mismatches 61; Indels 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108 QNCRQYSHTLTVDGRDTRVRGAACRNDDGSW 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124 QYCREFQQKAMIAGQKQEIYGTACPQPDGRW 154
                                                                                                                                                                              127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                             67 GAVLGGFLGNAVGGGTGRSLATAAGAVAGGIAGQGVQGALNRTDGVQLEIRKDDGQTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69 IGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDT-GNSYSVEPVRTYQRYNKQERRQ 123
                                                                                                                                                                                                                                                                 82 -- NQSLEKVKAGQVTRWRNPDTGNSYSVEP 109
                                                                                                                                                                                                                                                                                                                                                                                                                                           34 GAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12 SILCVSM-LSAC-----TTTGTRPAG--GSLFGR-SAQPSTPFLANLQGGIVG-K 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9 SLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSK 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 AVAIAVVTLTGCANNNTLSGDVFTASQAKQVQTVSYGTLISVRPVTIQGGDDNNVVGAIG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SGVELDRGDQTKALEAEYKALETAPVGTPVIWTGDDVKGQVVANAP---YQVGN-----
                                                                                                                                                                          VQKQGPTQFSVGQRVMLAN--SGSTITVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.9%; Score 107.5; DB 2;
24.0%; Pred. No. 0.019;
7ative 19; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------VGAAT 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.
```

THIS PAGE BLANK (USPTO)

Run

9::

Sequence:

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      score c
                                                                                                                76.5
76.5
76.5
74.5
74.5
73.5
73.5
73.7
73.7
73.7
73.7
73.7
                                                                                                                                                                                                                                                                                                                                                                                                                          78.5
78.5
78.5
78.5
77.5
77.5
77.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/
2: /cgn2_6/ptodata/1/
3: /cgn2_6/ptodata/1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-677-374-4
832
1 MRGCLQGSSLITTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    October 27, 2002, 10:56:01 ; Search time 8.34197 Seconds (without alignments) 471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231628 seqs, 24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 161
      GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/1/1aa/5A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/5B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6A_COMB.pep:*
/cgn2_6/ptodata/1/1aa/6B_COMB.pep:*
/cgn2_6/ptodata/1/1aa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/1/1aa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                US-08-556-978B-19
US-09-247-806-1
US-08-425-069-2
US-08-317-844B-2
US-09-347-177-3
US-09-353-498-8
US-09-067-351-2
US-08-895-590-2
US-08-895-590-2
US-08-895-590-2
US-08-413-118-6
US-08-413-146-6
US-08-413-148-6
US-09-232-446A-2
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-1
US-09-360-490-2
US-09-360-490-2
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
US-09-360-490-3
                                                US-08-070-301-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231628
                                                                Sequence 19, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 13, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 25, Appli
Sequence 26, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 28, Appli
Sequence 28, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 29, Appli
Sequence 29, Appli
                                                                  Sequence 'Sequence 'Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                         Sequence
                                           Sequence
16, Appl
2, Appli
7, Appli
                         Оy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
US-08-556-978B-19
                                                                                                                                                           US-08-556-978B-19
                                                                    Matches
                                                                                       Query Match
Best Local
  COUNTRY:
                                                                    l Similarity
24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19898
                                                                    Conservative
```

Result

ö

Database

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
69	69	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	70	70.5	70.5	70.5	71	71	71
8.3	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4					8 5	
101	101	1912	1021	1021	1021	547	547	547	547	479	606	792	731	248	2703	970	970
4	4	4	4	L	μ.	ω	N	2	ш	4	4	N	N	4	_	4	,_,
US-08-556-978B-22	US-08-556-978B-20	US-08-913-832A-2	US-08-440-549-12	US-08-440-519-12	US-07-910-760-12	US-09-085-407-3	US-08-452-427-3	US-08-452-567-3	US-08-340-203A-3	US-09-177-349-3	US-09-247-806-6	US-08-678-039A-40	US-08-911-364-1	US-09-032-523-1	US-08-185-432-19	us-09-090-793-5	US-08-752-929-7
Sequence 22, Ap	Sequence 20, Ap	Sequence 2, Appl		Sequence 12, Ap	Sequence 12, App.	Sequence 3, Appli	Sequence 3, App	Sequence 3, App	Sequence 3, App	Sequence 3, App	Sequence 6, Appl	Sequence 40, App	Seguence 1, Appli	Sequence 1, Appl.	Sequence 19, App	Sequence 5, Appl	Sequence 7, Appl
βĮ	φį	ΣLi	ğΊ	γpl	ğΊ	λli	ĭli)11	111)li)11	ğ)li	110	βpl	ìί	ol i

ALIGNMENTS

Sequence 19, Application US/08556978B Patent No. 6268169 GENERAL INFORMATION: APPLICATION NUMBER: US/08/556,978B FILING DATE: CLASSIFICATION: 435 PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/077,600 FILING DATE: JUNE 15, 1993 ATTORNEY/AGENT INFORMATION: NAME: FLOVD, LINDA AXAMETHY REGISTRATION NUMBER: 33,692 REFERENCE/DOCKET NUMBER: CR-9389-A TELECOMMUNICATION INFORMATION: TELEPHONE: 302-892-811 TELEFAX: 302-773-0164 INFORMATION FOR SEQ ID NO: COMPATIBLE OPERATING SYSTEM: MICROSOFT WINDOWS 9 SOFTWARE: MICROSOFT WORD FOR WINDOWS CURRENT APPLICATION DATA: COMPUTER READABLE FORM: MEDIUM TYPE: DISKETTE, 3.50 INCH COMPUTER: IBM PC COMPATIBLE CORRESPONDENCE ADDRESS: ADDRESSEE: E. I. DU PONT DE NEMOURS AND COMPANY STREET: 1007 MARKET STREET SEQUENCE CHARACTERISTICS: LENGTH: 651 amino acids TYPE: amino acid STRANDEDNESS: unknown TOPOLOGY: unknown MOLECULE TYPE: protein TITLE OF INVENTION: NERAL INFORMATION: APPLICANT: FAHNESTOCK, STEPHEN NUMBER OF SEQUENCES: STREET: 1007 MAR CITY: WILMINTON STATE: DELAWARE : 302-892-8112 302-773-0164 UNITED STATES OF AMERICA unknown NOVEL RECOMBINANTLY SPIDER SILK ANALOGS 107 95 95 PRODUCED

9.4%;

Score 78.5; DI Pred. No. 1.7;

DB、4;

4.

Mismatches

17; Indels 23; Length 651;

Gaps

Ъ Qy DЪ

2

```
Sequence 2, Application US/08425069
Patent No. 5728810
GENERAL INFORMATION:
APPLICANT: Lewis, Randolph V.
APPLICANT: Lewis, Randolph V.
APPLICANT: Hinman, Michael B.
TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: PROTEIN, A REPLICABLE VECTOR AND A TRANSFORMED CELL
NUMBER OF SEQUENCES: 69
CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch
STREET: 301 No. 5728810th Washington Street
STATE: Viginia
COUNTRY: Falls Church
COUNTRY: U.S.A.
ZIP: 22046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/247,806
CURRENT FILING DATE: 1999-02-11
EARLIER APPLICATION NUMBER: FR 98/01614
MUMBER OF SEQ ID NOS: 14
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 1
LENGTH: 651
TYPE: PRT
ORGANISM: Nephila clavipes
US-09-247-806-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
US-09-247-806-1
                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US-708/425,069
FILING DATE: 19-APR-1995
                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: PHILLIPPE, Michel
APPLICANT: GARSON, Jean-Claude
APPLICANT: GARSON, Jean-Claude
APPLICANT: ARRAUDEAU, Jean-Pierre
TITLE OF INVENTION: COMMETIC ON DERMATOLOGICAL COMPOSITION CONTACTING A
TITLE OF INVENTION: LEAST ONE NATURAL OR RECOMBINANT SPIDER SILK OR AN
TITLE OF INVENTION: ANALOG
FILE REFERENCE: 6388-0355-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/09247806 Patent No. 6280747
                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491 QGAGAAAAAAYGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 LIGSKIGQ 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27 QEVGAATGAVVG----GVAGQ-------LFGKGSGRVSMAIGGAVLGG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similaric,
hes 24; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64 LIGSKIGQ 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QGAGAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                               19-APR-1995
N: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.48;
35.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 78.5;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _DB 4; Length 651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2:
                                              US-08-317-844B-2
                                                                          TELEAX: (703) 241-2848
TELEX: 248345
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acids
TYPE: amino acids
TYPE: amino acids
              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-317-844B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                           MOLECULE TYPE:
                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: MUTPHY Jr., Gerald M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 1447-105p
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Lewis, Kanuar.

APPLICANT: Xu, Ming

APPLICANT: Xu, Ming

APPLICANT: Hinman, Michael B.

TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK

TITLE OF INVENTION: PROPEIN, A REPLICABLE VECTOR AND A TRANSFORMED CELL

TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF

TOTAL OF SEQUENCES: 62
                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compat
OPERATING SYSTEM: PC-DC
SOFTWARE: Patentin Rela
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 144;
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                                                          TELEPHONE: (703) 241-13(
TELEFAX: (703) 241-2848
                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/317,844B FILING DATE: 04-OCT-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Birch, Stewart, Kolasch & Birch
STREET: 301 No. 5989894th Washington Street
CITY: Falls Church
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491 ÓGAGAAAAAYGAGQEGIRGOGAGQGGYGGLGSQGSGRGGLGGQGAAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64 LIGSKIGQ 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2, Application US/08317844B
5. 5989894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 718 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U.S.A.
                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
     9.48;
                                                                                                                                                                                                                                                                                                                                                             Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9.4%;
Score 78.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ν..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 78.5; DE Pred. No. 1.9; 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1447-106P
                                                                                                                                                                                                                                                                                                                                                         Version #1.25
DΒ
2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 718;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

Length 718;

Qy 밁

B Ş

Matches

٠,

þŗ

```
밁
                        õ
                                                      밁
                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-09-034-177-3
                                                                                                                                                               us-09-034-177-3
                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/09034177 Patent No. 6127146
                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                           IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: GI 1174414
                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 747 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: FASTSEQ for Windows Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Lal, Preeti
APPLICANT: Guegler, Karl J.
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: HUMAN F.
                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                        491 QGAGAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 31/4 FOR CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                         NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: HEREWI
                           64 LIGSKIGQ 71
                                                                                27 QEVGAATGAVVG----GVAGQ-----
                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                   TELEFAX: 650-845-4166
                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 LIGSKIGQ 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27 QEVGAATGAVVG----GVAGQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGGQGAGQ 558
                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IBM Compatible
                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                   650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEREWITH
                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HUMAN FIBROUS PROTEIN
                                                                                                                        9.4%;
35.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09/034,177
                                                                                                                                                                                                                                                                                                                                                             PF-0486 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 1.9;
                                                                                                                        Score 78.5;
Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                           Mismatches
                                                                               2.0
                                                                                                                                     DB 3;
                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LFGKGSGRVSMAIGGAVLGG
                                                                                                                                    Length 747;
                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
```

```
; LENGTH: 255
; TYPE: PRT
; ORGANISM: E. (
US-09-553-498-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
US-09-553-498-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 7
US-09-067-351-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Apprint No. 599408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/553,498.
CURRENT FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: EP99107412.1
PRIOR FILING DATE: 1999-04-26
NUMBER OF SEO ID NOS: 10
SEO ID NO 8
LENGTH: 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 8, Applic Patent No. 6309861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Ambrosius, Dorothee APPLICANT: Rudolph, Rainer APPLICANT: Schaeffner, Joerg APPLICANT: Schwarz, Elisabeth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: Case 20379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Schwarz, Elisabeth
TITLE OF INVENTION: Process for the production of naturally folded and secreted
                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS
CURRENT APPLICATION NUMBER: US/09/067,351
                     TELECOMMUNICATION INFORMATION:
                                        ATTORNEY/AGENT INFORMATION:
NAME: CERRONE, MICHAEL C
REGISTRATION NUMBER:
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                    STREET: 31'.
STREET: 31'.
CITY: PALO ALTO
CTATE: CALIFORNIA
STATE: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Corley, Neil C. APPLICANT: Baughn, Mariah TITLE OF INVENTION: HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Hillman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106 SVEPVRTYORYNKOERROOYCREFOOKAMI -- AGOKQEIYGTACPOPDGRWQVISTE 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142 MSASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARFSGSGSGTSY 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 LGGLIGSKIGQSMDQQDKIK-LN-------QSLEKVKAGQVTRWRNPDTGNSY 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83 LQMTSLRSEDTAMYYCARDYGAY-WGQGTTVTVSSGGGGSGGGGGGGGGGDIELTQSPAI 141
                                                                                                                        CLASSIFICATION:
                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
relephone:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 LQGSSLIIISVFLVGCAQNFSRQEVGAATGAVV----GGVAGQLFGKGSGRVSMAIGGAV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SL----TISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKRAAAEQ-----KLISEE 249
                                                                                                                                                                                                                                                                                                         94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/09067351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09553498
                                                                                                                                                                                                                                                                                                                                                                                      3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tang, Y. Tom
                                                                                                                                                                                                                                                                                                                                                                                                           INCYTE PHARMACEUTICALS, INC
(650) 855-0555
                                                                                                                                           Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jennifer L.
                                                    39, 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 77.5; DB 4; Pred. No. 0.62;
                                          PF-0511 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
```

INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS

Ν.

amino acids

```
US-09-360-490-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2,
Patent No.
                                                                             TELEFAX: (650) 845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-067-351-2
                           SEQUENCE CHARACTERISTICS:
LENGTH: 551 amino acid
TYPE: amino acid
STRANDEDNESS: single
           IMMEDIATE SOURCE
                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: CERRONE, MICHAEL C.
REGISTRATION NUMBER: 39,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                              CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: LBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                         SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                   STREET: 51,
STREET: 51,
CITY: PALO ALTO
CTATE: CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: INCYTE PHARMACEUTICALS, INC.
STREET: 3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
LIBRARY:
                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                   REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATE SOURCE:
LIBRARY: KERANI
CLONE: 2029060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114 QRYNK 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67 SK-----IGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 22.4 nes 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 2, AFE
NO. 6221843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIG 66
                                                                                                                                                                                                                                                                                                                                               94304
                                                   551 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09360490
                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tang, Y. Tom
Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Corley, Neil C
Baughn, Mariah
                                                                                                           (650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KERANOT02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                        855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                                                                                                                         HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.3%; Score 77; I
22.4%; Pred. No. 2;
                                                                                                                         39,132
RER: PF-0511 US
                                                                                                                                                                                              09/067,351
                                                                                                                                                                                                                                             us/09/360,490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _DB 2; Length 551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
Qy
                                                         Ъ
                                                                                   Qy
                                                                                                                                                                TOPOLOGY: L.

MOLECULE TYPE:
US-08-374-077C-2
                                                                                                                     Query Match
Best Local Similarity
                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-374-077C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: McGowan, malcolm M.
REGISTRATION NUMBER: 39,300
REFERENCE/DOCKET NUMBER: 0226
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; CLONE:
US-09-360-490-2
                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Appli
Patent No. 602791
                                     2389 IGSSNÖSIFÖGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
83 -----QSLEKYKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQOKAMIA 136
                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                       29 VGAATGAVVGGVAGQLFGKGSGRVSMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: BURNS, DOANE, SWECKER & MATHIS, LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                       TYPE: amino acid
                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE: 19-JAN CLASSIFICATION: 43:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 699 Frinc
CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114 QRYNK 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54 GASEGSRSLYNLGGAKRYSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 GSSLIIISVELVGCAQNESRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIGGAVLGGLIG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SK------IGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٧A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/08374077C
                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hall, Linda M.
Ren, Dejian
Zheng, Wei
Dubald, Manuel Marcel Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2029060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                      19-JAN-1995
                                                                                                  9.2%; Score 76.5; E
24.8%; Pred. No. 17;
tive 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genes Encoding an Invertebrate Alpha1 Calcium Channel Subunit 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9.3%; Score 77; 22.4%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                US/08/374,077C
                                                                                                                                                                                                                                             2:
                                                                                                                                                                                                                                                                                                022650-264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28; Mismatches
                                                                                                                           DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4; Length 551;
                                                                                                  66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53;
                                                                                                                         Length 2516;
                                                                                             Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
```

દ

```
RESULT 11
US-07-803-633A-13
: Sequence 13, Application US/07803633A
: Patent No. 5369025
                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                   ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-895-590-2
                                                                                                                              õ
                                                                                                                                                                 В
                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-895-590-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Applic Patent No. 6207410
                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 703-836-2021
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION UMBER: US/08/374
APPLICATION NUMBER: US/08/374
FILING DATE: 19-JAN-1995
ATTORNEY/AGENT INFORMATION:
NAME: MCGOWAN, Malcolm M.
REGISTRATION NUMBER: 39,300
REFERENCE/DOCKET NUMBER: 0226
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: APPLICANT:
                                                                                                                                                                  2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                    2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                  2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Dubald, Manuel TITLE OF INVENTION: Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137 GOKOEIYGT 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                  29 VGAATGAVVGGVAGQLFGKGSGRVSMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                  IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                  GQGNQTYSS 2516
                                                                                                                                GOKQEIYGT 145
                                                                                                                                                                  SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                  -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GQGNQTYSS 2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SPPIPDNRLRRVATYTTINNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                   l Similarity
32; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08895590
                                                                                                                                                                                                                                                                                                                                                                                                                                    2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8: BURNS, DOANE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hall, Linga .
Ren, Dejian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zheng, Wei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Linda M.
                                                                                                                                                                                                                                                                                                                9.2%; Score 76.5;
24.8%; Pred. No. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/374,888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/895,590
                                                                                                                                                                                                                                                                                                    18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Marcel Paul
Encoding an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SWECKER & MATHIS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         022650-263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Insect Calcium Channel
                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                    66;
                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                   Length 2516;
                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                   4
```

```
Q
                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                      RESULT 12
US-08-220-151-6
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GS-07-803-633A-13
                                                                                                                                                                       Sequence 6, Application US/08220151 Patent No. 5529780
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                       GENERAL INFORMATION:
APPLICANT: Paoletti,
APPLICANT: Limbach,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: :
SEQUENCE CHARACTERISTICS:
LENGTH: 865 amino acids
TYPE: AMINO ACID
TECRNICAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DUS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/803,633A
FILING DATE: 19911210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                           NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELLEFAX: (,, TELLEFAX: 248345
                                                                                                                                                                                                                                                                    796
                                                                                                                                                                                                                                                                                                119 QERRQQYCRE-FQQKAMIAGQKQ 140
                                                                                                                                                                                                                                                                                                                                                                                              688 FMNGLAELFNGMGQVGQAIGKVVVVGAAGAIVSTISG-VSAFMSNPFGALAIGLIIIAGLV 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANDURESSEE: BIRCH, STEWART, KOLASCH & BIRCH STREET: 301 No. 5369025th Washington Street CITY: Falls Church STATE: Virginia
                                                                                                                                                                                                                                                                                                                                 747 AAFL--AYRYVNKLKSNPMKALYPMTTEVLKA-QATRELHGEESDD------LERTSI 795
                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                   ADDRESSEE: Curry,
                                                                                                                                                                                                                                                                                                                                                                                                                             16 FLVGCAQNFSRQ-EVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Murphy Jr., Gerald REGISTRATION NUMBER: 28,9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
 STATE:
                                                                                                                                                                                                                                                                                                                                                                GSKIGQSMDQQDKIKLN-----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 118
                                                                                                                                                                                                                                                                    DERKLEEAREMIKYMALVSAEER 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22040-0747
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YANAGIDA, NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (703) 241-2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OGAWA, Ryohei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAZERIAN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                         Paoletti, Enzo
                                             Curtis, Morris & Safford
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (703)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.18;
25.98;
                                                                             NUCLEOTIDE AND AMINO ACID SEQUENCES OF CANINE HERPESVIRUS gB, gC AND gD AND USES THEREFOR 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RECOMBINANT FOWLPOX VACCINE FOR PROTECTION AGAINST MAREK'S DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Keyvan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5369025oru
                                                                                                                          ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1644-103P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 76; DB Pred. No. 4.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #
                                                                                                                                                                                                                                                                                                                                                                                                                                                             46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

COUNTRY:

USA

```
US-08-413-118-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FRAGMENT TYPE:
US-08-220-151-6
                                                                                                                                                                                                                                                                                                                                                          Sequence 6, Application US/08413118 Patent No. 5688920 GENERAL INFORMATION:
                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIO Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPOTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/220,151
FILING DATE: 30-MAR-1994
ATTORNEY/AGENT INFORMATION:
NAME: FTORMEY/AGENT INFORMATION:
REGISTRATION NUMBER: 25,06
REGISTRATION NUMBER: 25,506
REGISTRATION INFORMATION:
TELEPHONE: (212) 840-3333
THELFEAN: (712) 840-3713
       PRIOR
                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: CURTIS, MORRIS & SAFFORD, P.C.
STREET: 530 FIFTH AVENUE, 25TH FLOOR
                                                                                                                                                                                                                                                                       APPLICANT: PAOLETTI, ENZO
APPLICANT: LIMBACH, KEITH J.
TITLE OF INVENTION: NUCLECTII
TITLE OF INVENTION: CANINE H.
NUMBER OF SEQUENCES: 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (212) 840-3333
TELEFAX: (212) 840-0712
TELEX: 425066 CURTMS
INFORMATION FOR SEQ ID NO: 6:
                 CLASSIFICATION:
                                 FILING DATE:
                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                    COUNTRY: UZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        813 AAFLAYRHISRLRRNÞMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 913 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        753 VLLRGTANFFOGLGDVGAAVGKVVLGATGAVISAVGGMVSELSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91 GQVTRWRNPDTGNSYSVEPV-----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 VFLVGCAQNF-SROEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity es 37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 913 amino acids
TYPE: amino acid
STRANDEDNESS: single
APPLICATION DATA:
                                                                                                                                                                                                NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10036
                                                                                                                                                                         UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                               29-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                         NUCLEOTIDE AND AMINO ACID SEQUENCES OF CANINE HERPESVIRUS 9B, 9C, AND 9D AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.0%;
                                        US/08/413,118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Score 74.5; DI
; Pred. No. 7.4;
18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
```

```
RESULT 14
US-08-473-446-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
   INFORMATION FOR SEQ
                                                                                                                                                                                                                           COUNIKL.

ZIP: 10036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: IBM PC compatible
TOTEM: PC-DOS/MS-DOS
TOTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-413-118-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Applic Patent No. 6017542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 23.6%; Pred. No. 7.
Matches 37; Conservative 18; Mismatche
                         NAME: FROMMER, WILLIAM S.
REGISTRATION NUMBER: 25,506
REFERENCE/DOCKET NUMBER: 454
TELECOMMUNICATION INFORMATION.
TELEPHONE: (212) 840-3333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                     COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/473,446
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: CURTIS, MORRIS & SAFFORD,
STREET: 530 FIFTH AVENUE, 25TH FLOOR
                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: NUCLEOTIDE AND AMINO ACID SEQUENCES OF TITLE OF INVENTION: CANINE HERPESVIRUS 9B, 9C, AND 9D AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: PAOLETTI, ENZO APPLICANT: LIMBACH, KEITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 840-0712
INFORMATION FOR SEQ ID NO: /
                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                            CITY: NEW YORK
STATE: NEW YOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: FROMMER, WILLIAM S. REGISTRATION NUMBER: 25.50 REFERENCE/DOCKET NUMBER: 45. TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         753 VLLRGIANFFOGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91 GOVTRWRNPDTGNSYSVEPV-----RTYORYNKOE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66 GSKI-----A 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS-----MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 0 FILING DATE: 30-MAR-1994
                                                                                                                                                                                                                                                                                                                                                          NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08473446
                   (212)
                                                                                                                                                                                                                                                                                                                                UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            913 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
840-0712
ID NO: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (212) 840-3333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEITH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US 08/220, 151
                                                         454310-2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           454310-2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51;
                                                                                                                                                                                                                                                                                                                                                                                                                                    AND GD AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
```

```
RESULT 15
US-09-232-468A-2
US-09-232-468A
Sequence 2, Application US/09232468A
Patent No. 6207165
GENERAL INFORMATION:
APPLICANT: AUDONNET et al.
TITLE OF INVENTION: POLYNUCLEOTIDE VACCINE FORMULA AGAINST PORCINE
TITLE OF INVENTION: REPRODUCTIVE AND RESPIRATORY PATHOLOGIES
FILE REFERENCE: 454313-2230
CURRENT APPLICATION NUMBER: US/09/232,468A
CURRENT FILING DATE: 1999-01-05
NUMBER OF SEQ ID NOS: 54
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 2
LENGTH: 913
TYPE: PRT
ORGANISM: Pseudorables virus
US-09-232-468A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                          Ş
                                                                                                                                                                                       В
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear NOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal US-08-473-446-6
Search completed: October 27, 2002, 11:00:28 Job time : 9.34197 secs
                                                                                                  В
                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                    Query Match 9.0%; Score 74.5; DB 4; Length 913; Best Local Similarity 23.6%; Pred. No. 7.4; Matches 37; Conservative 18; Mismatches 51; Indels 51; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 9.0%; Score 74.5; DB 3; Length 913; Best Local Similarity 23.6%; Pred. No. 7.4; Matches 37; Conservative 18; Mismatches 51; Indels 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 913 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                  873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                               813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                                                                                                                          753 VLLRGIANFFQGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          753 VLLRGIANFFQGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                                       66 GSKI-----A 90
                                                                                                                                             91 GQVTRWRNPDTGNSYSVEPV-----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                     15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91 GOVTRWRNPDTGNSYSVEPV-----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 GSKI-----A 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS-------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51; Indels 51;
                                                                                                                                                                                                                                                                                                                                                                                         <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90.:
                                                                                                                                                                                                                                                                                          Pred. No. is th score greater t and is derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1
                                                                                                                                                                                                        Score
   102.5
102.5
101
95
88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq
                                                                                       832
832
815
815
112
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length:
length:
                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                       is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, rived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A_Geneseq_032802:*

1: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*

2: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*

3: /SIDS1/gcgdata/geneseg/geneseqp-embl/AA1982.DAT:*

4: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*

5: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*

6: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*

7: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*

8: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-677-374-4
832
 100.0

100.0

98.0

98.0

13.5

13.3

12.3

12.3

12.3

11.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 October 27, 2002, 10:55:57;
                                                                                                                                                                                                                                                                                                                                                                  747574 seqs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                       // SIDS1/gcgdata/geneseq/geneseqp emb1/AA198 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA199 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA2000 DAT: *
// SIDS1/gcgdata/geneseq/geneseqp emb1/AA2001 DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000000000
 161
256
162
162
20
224
223
230
154
309
                                                                                                                                                                                                           BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0.5
   H
 AAB81127
AAB81128
AAG78025
AAB81126
AAB81130
AAB20105
AAA3434367
AAY34362
AAR03734362
                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Search time 21.6891 Seconds
(without alignments)
824.509 Million cell updates/sec
                                                                                  Optimised OspA pro
C17E2 OspA constru
Piscirickettsia sa
OspA antigen amino
OspA B-cell epitop
Moraxella catarrha
Porphorymonas ging Porphorymonas ging Porphorymonas ging PROMP-2 gene prod.
Novel human diagno Spider recombinant
                                                                                                                                                                                                      Description
```

Neuronal invertebr	S/BTOMAY	17	2516	9.2	76.5	4
a meningi	AAY75098	21	2599	و د		44
Human keratin KERT	AAY52398	21	551	9 . u	77	43
Human protein HP10	AAG93288	22	285	9.3	77	42
ο.	AAY73440	21	285	9.3	77	41
Human signal pepti	AAY87280	21	285	9.3	77	40
Human prostate can	AAB57121	21	223	9.3	77	39
Pseudomonas aerugi	AAU36520	22	514	9.3	77.5	38
Human diagnostic a	AAU19445	22	354	9.3	77.5	37
Human polypeptide	AAM40157	22	302	9.3	77.5	36
	AAM39011	22	285	9.3	77.5	ა 5
Human PRO polypept	AAU29025	22	285	9.3	77.5	34
Human PRO284 (UNQ2	AAB44244	21	285	9.3	77.5	ω ω
Human PRO284 prote	AAY41688	20	285	9.3	77.5	3 2
E. carotovora PelB	AAY72020	22	255	9.3	77.5	31
Expression plasmid	AAB70769	22	255	9.3		30
PelB-scFvOxazolon	AAB74199	22	255	9.3		29
E. coli expression	AAB11398	21	255	9.3	77.5	28
Human polypeptide	AAM41943	22	102	9.3	•	27
N. clavipes spider	AAY59070	21	718	9.4		26
Nephila clavipes s	AAW53346	19	718	9.4	•	25
pes dragli	AAR1,4308	12	718	9.4	•	24
Spider silk protei	AAY40097	20	651	9.4	78.5	23
rt	AAB56803	21	618	9.6	9.	22
	ABB70501	22	542	9.7	0	21
	ABB65791	22	542	9.7	0	20
	ABB65790	22	542	9.7		19
	ABB58019	22	666	9.7	81	18
Novel human diagno	ABG06301	22	2017		82	17
fusion of an	AAB30695	22	423	10.0	83	16
0	AAY11028	19	116	10.0	83	15
	ABB61254	22	1251	10.1	84	14
la	62	22	2309	10.4	86.5	13
Drosophila melanog	ABB69847	22	147	10.5		12

ALIGNMENTS

RESULT 1 AAB81127

vaccine; SRS.

Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease;

Optimised OspA protein 17E2 amino acid sequence.

11-JUL-2001 (first entry)

AAB81127;

AAB81127 standard; Protein; 161

À

```
ID XXXX PRY X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
Region
Kay WW,
                                                                                  (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                               17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Piscirickettsia
                                                                                                                                                                                                                                                                 17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                             17-SEP-1999;
    Burian J,
                                                                                                                                                                                                                                                                     99CA-2281913
                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
109..128
/label= B_cell_epitope
    Kuzyk MA;
```

```
RESULT 2
AAB81128
ID AAB8
ID AAB8
XX AAB8
XX AAB8
XX AAB8
XX AAB8
XX Poix
KW Poix
KW Poix
KW Vacc
KW Vacc
KW Vacc
KW Vacc
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
FT Reg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                  17-SEP-1999;
                                                                              CA2281913-A1
                                                                                                                                                                                         Key
Region
                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                          Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease;
                                                                                                                                                           Region
                                                                                                                                                                                                                                                  Piscirickettsia
                                                                                                                                                                                                                                                                                                                              C17E2 OspA construct with N-terminal fusion partner
                                                                                                                                                                                                                                                                                                                                                                    11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                             AAB81128 standard; Protein; 256 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The present septicaemia (SRS) and other rickettsial diseases. The present encoding OspA 17E2 (AARB6247) has been optimised for expression in Ecsherichia coli. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RRQQYCREFQOKAMIAGQKQEIYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RROQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LGGLIGSKIGOSMDQODKIKLNQSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MRGCLOGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGGLFGKGSGRVSMAIGGAV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-316844/34.
DB; AAF86247.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; ilarity 100.0%; Conservative
               99CA-2281913
                                                                       /label= C17E2_OspA
/note= "Product of OspA gene optimised for expression
Escherichia coli"
                                                                                                                                                    /label= Undefined_N-terminal_fusion_partner
96...256
                                                                                                                                                                                                                                                 salmonis
                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 832; DB 22
Pred. No. 3e-81;
0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
RESULT 3
AAG78025
ID AAG7
XX AAG7
XX AAG7
XX 15-J
XX 15-J
XX Pisc
XX Pisc
XX Sept
KW Sept
KW Sept
KW Sept
KW ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX ATCC
XX A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
             01-JUL-2000;
                                                                 12-MAR-2001; 2001WO-GB01055
                               11-MAR-2000;
                                                                                                                               20-SEP-2001
                                                                                                                                                                                                                                                                                      Piscirickettsia salmonis; septicaemia; SRS; surface
                                                                                                                                                                              WO200168865-A2
                                                                                                                                                                                                                        Piscirickettsia
                                                                                                                                                                                                                                                                         septicaemia;
ATCC VR-1361
                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia salmonis polypeptide P10.6.
                                                                                                                                                                                                                                                                                                                                                                                                                      15-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAG78025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG78025 standard; Protein; T62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic amount of a particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The present construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96 MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MRGCLQGSSLTITSVFLVGCAQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LGGLIGSKIGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
2000GB-0005838,
2000GB-0016080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
ilarity 100.0%;
Conservative C
                                                                                                                                                                                                                     salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99CA-2281913
                                                                                                                                                                                                                                                                       piscirickettsiosis; salmonid rickettsial;
antigen; vaccine; antibacterial; fish;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 832; DB 22;
Pred. No. 5.4e-81;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
```

0;

'n

of

```
RESULT 4
AAB81126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PANKE PER SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND DE SECOND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to nucleic acid sequences and the encoded protein of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity to protect fish against P. salmonis which causes piscirickettsiosis, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New nucleic acids encoding an amino acid
surface antigen present on Pisciricketts
protect fish against piscirickettsiosis
(KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                     CA2281913-A1
                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                         Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                         vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Poikilothermic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OspA antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB81126 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Burzio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Simard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUL-2000;
29-JUL-2000;
                                                                                           17-SEP-1999;
                                                                                                                                      17-SEP-1999;
                                                                                                                                                                               17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AQUA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-639050/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQUA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAH79040
                                                                                                                                                                                                                                                                                                                                                                                                                       OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brouwers H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000GB-0016082
2000GB-0018599
                                                                                                                                                                                                                                                                                                                                                                                                                                           fish;
                                                                                           99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                         salmonid
                                                                                                                                      99CA-2281913
                                                                                                                                                                                                                                                                                                                                                         salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25pp; English
                                                                                                                                                                                                                                                                                       Location/Qualifiers
110..129
                                                                                                                                                                                                                                                                     /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EURO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia salmonis; r
nid rickettsial septicaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98.0%;
                                                                                                                                                                                                                                                                   B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        an amino acid sequence homologous to Piscirickettsia salmonis are useful t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 815; DB 2
Pred. No. 2e-79;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Griffiths
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ļ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                           rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Valenzuela
                                                                                                                                                                                                                                                                                                                                                                                                           rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
```

```
RESULT 5
AAB81130
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                       뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                    Poikilothermic s
vaccine; OspA; s
SRS; antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animal particularly poikilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The presses sequence represents P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                17-SEP-1999;
                                                                                                        17-SEP-1999;
                                                                                                                                                                             Piscirickettsia
                                                                                                                                                                                                                                                     OspA B-cell
                                                                                                                                                                                                                                                                             11-JUL-2001
                                                                                                                                                                                                                                                                                                                            AAB81130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 2; Fig 2B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kay
                                (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                        123
                                                                                                                                                                                                                                                                                                                                                                                                               122
                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WW.
                                                                                                                                                                                                                                                                                                                                                                                      RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                      GGLIGSKIGQSMDQQDKIKLNQSLEKYKAGQYTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                             KAY W W.
BURIAN J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF86246
                                  KUZYK M A.
                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        response
           Burian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Burian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162 AA;
                                                                                                                                                                                                                                                    epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                 fish; Pis
salmonid
                                                                                 99CA-2281913
                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35pp; English.
                                                                                                                                                                                                                                                                                                                            Peptide;
        Kuzyk
                                                                                                                                                                                                                                                    peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98.0%;
                                                                                                                                                                                                                           Piscirickettsia
                                                                                                                                                                                                                  rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Score 815; DB 22; Pred. No. 2e-79; 1; Mismatches
                                                                                                                                                                                                                                                     #2
                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                 a salmonis; rickettsial pasepticaemia; rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                animals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
```

2001-316844/34.

This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a OspA in the form of a vaccine. The method is used for protecting animals, rickettsial polkilothermic fish, against the bacterial pathogen animals, rickettsial septicaemia (SRS) and other rickettsial diseases. The present seguence represents an immunogenic plathoge of the P. salmonis of the method is also useful for protecting against salmonid protein. The peptide is used to raise rabbit anti-OspA antibodies.

Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis

Page 17; 35pp; English.

```
The present sequence is that of BASB113 protein from Moraxella cattarhalis strain Mc3931 (ATCC 43617), a causative agent of otitis media in children and pneumonia in adults. The invention provides BASB113 polypeptides, and polynucleotides encoding them, as well as expression vectors, host cells and methods for producing BASB113 polypeptides using recombinant methods. Also claimed is a vaccine composition comprising a BASB113 polypeptide, an immunogenic
                                                                                                         Claim 1; Page 67; 86pp; English.
                                                                                                                  New BASB113 polypeptide isolated from Moraxella catarrhalis bacterium, useful for diagnosing and producing vaccines against bacterial infections such as otitis media and pneumonia
                                                                                                                                                                                                                                        (SMIK ) SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                         25-JUN-1999;
                                                                                                                                                                                                                                                                                               23-JUN-2000;
                                                                                                                                                                                                                                                                                                                        04-JAN-2001.
                                                                                                                                                                                                                                                                                                                                               W0200100836-A1
                                                                                                                                                                                                                                                                                                                                                                        BASB311; infection; otitis media; pneumonia; therapy; diagnosis; antibacterial; antimicrobial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                  Moraxella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB20105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB20105 standard; Protein; 224 AA.
                                                                                                                                                                                      2001-112458/12.
)B; AAF30043.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PVRTYQRYNKQERRQQYCRE
                                                                                                                                                                                                                                                                                                                                                                 catarrhalis.
                                                                                                                                                                                                                                                                                                                                                                                                                      catarrhalis BASB113 protein
                                                                                                                                                                                                                                                                                          2000WO-EP05851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                     99GB-0015044.
```

AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas ginglvalis (PG) polypeptide sequences given in AAX AAX34583. AAX31802 to AAX91989 represent PCR primers used in the

in AAY34318 in the

ţ

Claim 1;

Page

469;

English.

Antigenic Porphorymonas gingivalis peptides gingivitis

for preventing

```
AAY34487
                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99999999999888
                                                                            WPI; 199
N-PSDB;
                                                                                                                                                         23-APR-1998,
05-MAY-1998,
22-MAY-1998,
                                                                                                                                                                                    04-AUG-1998,
10-DEC-1997,
31-DEC-1997,
30-JAN-1998,
10-MAR-1998,
09-APR-1998,
                                                                                                                Agius
                                                                                                                              (CSLC-) CSL LTD.
                                                                                                                                                  29-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                  10-DEC-1998;
                                                                                                                                                                                                                                                                    17-JUN-1999
                                                                                                                                                                                                                                                                                                      Porphorymonas
                                                                                                                                                                                                                                                                                                                         vaccine;
                                                                                                                                                                                                                                                                                                                                          Porphorymonas gingivalis protein PG3.
                                                                                                                                                                                                                                                                                                                                                                                                AAY34487 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                   25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                      AAY34487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fragment of a BASB113 polypeptide, or a polypeptide having at least 85% amino acid sequence identity to BASB113, or comprissing a diagnosing a Moraxella infection involves dentifying a BASB113 polypeptide or antibody. A claimed therapeutic composition useful in treating humans with M. catarrhalis infection comprises at least polypeptides also have utility in raising specific antibodies, and in correction comprises at least polypeptides also have utility in raising specific antibodies,
                                                                        1999-385613/32.
DB; AAX91705.
                                                                                                       S CT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                     59 -----AVLGGLIGSKIGOSMDQODKIKLNOSLEKVKAGQVTRWRNPDTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                     EKTGRDAILGAAVGAAAGAYMERQAK----QIEQQMQGTGVTVTHDTDTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GVVLLASSMALAGCANTGT----TGNGTGFGGANVNKAVIGAVÄGAL---GGTAISKATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSSLIIISVFLVGCAQNFSRQEVGAATG-----AVVGGVAGQLFGKGSGRVSMAIGG 58
                                                                                                  Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                     monas gingivalis; PG; periodontal disease,
antigenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                              98AU-0001546
98AU-0002264
98AU-0002911
98AU-0003128
98AU-0003338
                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224 AA;
                                                                                                                                              98AU-0004917
                                                                                                                                                                                                                                                                                                   gingivalis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                           97AU-0000839.
97AU-0001182.
                                                                                                                                                                                                                                              98WO-AU01023
                                                                                                 Hocking DI
Webb EA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.3%;
                                                                                                        DM,
                                                                                                                                                                                                                                                                                                                                                                                                 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 111;
Pred. No. 0
                                                                                                     Margetts MB,
                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 22;
                                                                                                  Patterson MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35;
                                                                                                                                                                                                                                                                                                                    gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
```

Вb

_

Š

109 PVRTYQRYNKQERRQQYCRE 128

Conservative

0,

100.0%; 13.5%;

Score 112; Pred. No. Mismatches

; DB 22; . 3.3e-05; ches 0;

Indels Length 20;

0, Gaps

0,

5.

Query Match Best Local Similarity

Matches

٩

```
RESULT 8
AAY34362
  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8×666666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                    30-JAN-1998;
10-MAR-1998;
09-APR-1998;
                                                                                                                                                                                                                         05-MAY-1998;
22-MAY-1998;
29-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can be used to detect Porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease
AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PG) polypeptide sequences given in AAY34318 to AAX94583. AAX91802 to AAX91989 represent PCR primers used in the isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can
                                                                                                                                                                             Agius
                                                                             Claim 1; Page 325-326;
                                                                                                   gingivitis
                                                                                                             Antigenic Porphorymonas gingivalis peptides
                                                                                                                                   N-PSDB;
                                                                                                                                               WPI;
                                                                                                                                                                                                                                                                                                     10-DEC-1997;
31-DEC-1997;
                                                                                                                                                                                                                                                                                                                           04-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                         17-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                  Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY34362 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        especially gingivitis.
                                                                                                                                                                     Ross
                                                                                                                                                                                                                                                                                                                                                   10-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                               W09929870-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY34362;
                                                                                                                                                                                                     (CSLC-)
                                                                                                                                                                                                                                                            23-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66 ALIGKKMDKQKK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 æ
                                                                                                                                                                    S CT,
BC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSLIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSM-AIGGAVLGGLIG
                                                                                                                                  1999-385613/32.
)B; AAX91580.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ASVLAVALVFAGCGLn---NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                     CSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                        monas gingivalis;
antigenic.
                                                                                                                                                                   Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223
                                                                                                                                                                                                     LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gingivalis protein PG3
                                                                                                                                                                                                                         97AU-0000839.
97AU-0001182.
98AU-0001264.
98AU-0002261.
98AU-0002911.
98AU-0003128.
98AU-000338.
98AU-00034917.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΑĄ;
                                                                                                                                                                                                                                                                                                                             98AU-0005028
                                                                                                                                                                                                                                                                                                                                                   98WO-AU01023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                    Hocking DA
Webb EA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.3%;
                                                                           588pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 102.5; DB 20
Pred. No. 0.0079;
3; Mismatches 31;
                                                                                                                                                                              DΜ,
                                                                            English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    periodontal disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                             Margetts
                                                                                                                                                                               MB,
                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                             preventing
                                                                                                                                                                               Patterson MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
```

δÃ

29

VGAATGAVVGGVAGQLEGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL

Query Match Best Local

Similarity

12.1%;

Score 101; DB 11; Pred. No. 0.0071; 9; Mismatches 23;

Length 154;

Indels

Gaps

0;

0;

Conservative

Matches

```
RESULT 9
AAR05799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                 in the presence of a detergent or digesting the cell wall fraction with lysczyme, opt. in the presence of a detergent. The genes encoding the PBOMP proteins were isolated by screening a DNA library with an oligonucleotide probe based on the amino acid sequence of the PBOMP protein, or using antibodies to PBOMP.
                                                                       The PBOMP proteins were isolated from a PBOMP-enriched insoluble cell wall fraction from physically disrupted cells of H. influen and then solubilising the PBOMP from the cell wall fraction by h
                                                                                                                                    Outer membrane protein epitopes of Haemophilus the prodn. of antibodies, in vaccines and for plaingnosis.
                                                                                                                                                                                                                                                                                                                                                               Praxis Biologics Outer Membran-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     assays. Porphorymonas especially gingivitis.
Sequence
                                                                                                                                                                                                             Anilionis A,
                                                                                                                                                                                                                                                       01-SEP-1988;
21-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                 Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR05799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           be used
                                                                                                                 Disclosure;
                                                                                                                                                                              N-PSDB;
                                                                                                                                                                                                                                                                                     31-AUG-1989;
                                                                                                                                                                                                                                                                                                                               WO9002557-A
                                                                                                                                                                                                                                                                                                                                                                                                    PBOMP-2 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                  (PRAX-) PRAXIS
                                                                                                                                                                                                                                                                                                          22-MAR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                        1990-115815/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIGQSMDQQDK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGKKMDKQKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSM-AIGGAVLGGLIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to detect Porphorymonas gingivalis in standard hybridisation Porphorymonas gingivalis is involved in periodontal disease
                                                                                                                                                                              AAQ03870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard; Protein; 154
 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  230 AA;
                                                                                                                Fig 15; 164pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                      prod
                                                                                                                                                                                                             Seid
 AA:
                                                                                                                                                                                                                                   BIOLOGICS IN
                                                                                                                                                                                                                                                       88US-0239572.
89US-0396572.
                                                                                                                                                                                                                                                                                     89WO-US03779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                             RC,
                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.3%;
34.7%;
                                                                                                                                                                                                              Deich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 102.5; DB
Pred. No. 0.0082;
                                                                                                                                                                                                             RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                        Protein
                                                                                                                                                                                                                                                                                                                                                                                  immunisation;
                                                                                                                                                                                                              Zlotnick
                                                                                                                                                                                                              G₩,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                                                                                                                              prodn. of reagents
                                                                                                                                                                                                              Green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                              BA
                                                                                    influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
••
                                                                                                                                         u in
∖ for
                                                                         heating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
```

В

```
Page
```

```
The invention relates to isolated polynucleotide (I) and CC polypeptide (II) sequences. (I) is useful as hybridisation probes, CC polynucleotides are also used in diagnostics as expressed sequence tags CC and gene mapping, and in recombinant production of (II). The CC and gene mapping, and in recombinant production of (II). The CC for identifying expressed genes. (I) is useful in gene therapy techniques CC (II). (II) is useful for generating antibodies against it, detecting or imaging of sites expressing (II). (I) and (II) are useful in medical continuity of sites expressing (II). (I) and (II) are useful in medical continuity of sites expressing (II). (I) and (II) are useful in medical continuity. The polypeptide and polynucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations in CC and to produce other types of data and products dependent on DNA and CC specification, but was obtained in electronic format directly from WIPO CC at fib. wiso.int/pub/published oct sequences.
                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                   Sequence
                                                                                      12 IISVFLVGCAQNFSR-----QEVGAATGAVVGGVAGQLFGKG--SGRVSMAIGGAVLGGL 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 20; SEQ ID No 46265; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-MAR-2000; 2000US-0540217,
23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAR-2001; 2001WO-US08631.
                                                                 IISILPAKVAVDNSONKRNAQAFGALIGAVAGGVIGHNVGSGSNSGTTAGAVGGGAVGAA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; chromosome mapping; gene mapping; gene therapy; forensic;
food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel human diagnostic protein #15897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG15906 standard; Protein;
                                                                                                                                                                l Similarity
32; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 VGTLGGGALGGIAGSTIGGGRGQAIAAVVGAIGGAIAGSKIEEKMSQVNGAEL
                                                                                                                                                                                                                                 309
                                                                                                                                                          Conservative
                                                                                                                                                                                                                                Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Liu C,
                                                                                                                                                                     11.48;
33.08;
                                                                                                                                                        12;
                                                                                                                                               Score 95; DB Pred. No. 0.07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309 AA
                                                                                                                                             DB 22; |
).077;
nes 39;
                                                                                                                                                                           Length 309;
                                                                                                                                       14;
                                                                                                                                 ω
                                       The present sequence is that of the orb-weaver spider (Nephila Cc clavipes) recombinant silk protein pETNoDS. The invention structural proteins. Organic acids are used to lyse recombinant CC cells or other biological samples (such as non-recombinant) proteins by hydrolysing many of the macromolecules while leaving CC derived cells), and enrich the purity and yields of structural proteins intact. In the case of silk proteins, the crombinant of the structural proteins intact. In the case of silk proteins, the crombinant silk processed into an aqueous-based mixture for conditionant silk protein was obtained using formic acid containing denaturant (3 M guandidne-HCl) and by affinity containing denaturant (3 M guandidne-HCl) and by affinity materials including films, fibres, woven articles, sutures, and finity containistic protection, parachutes and parachute cords. The new cc fewer steps, requires less time and smaller volumes of reagents,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                               Claim 2; Page 41-42; 49pp; English.
```

DЪ

185

δÃ

Matches

Local

z

```
RESULT 11
AAB82611
Recovering structural polypeptides in a biological sample, useful purifying and spinning spider silks and other structural proteins, comprises treating the sample containing the polypeptides with an
                                                                                   N-PSDB;
                                                                                           WPI; 2001-483136/52.
                                                                                                                                                                                 (MELL/)
(ARCI/)
                                                                                                                                                                     (BUTL/)
                                                                                                                                                                                                                    20-JAN-2000; 2000US-0490291.
                                                                                                                                                                                                                                               01-NOV-2000; 2000WO-US30086
                                                                                                                                                                                                                                                                                                            WO200153333-A1.
                                                                                                                                                                                                                                                                                                                                                     Misc-difference 522 rencoded by CGA
                                                                                                                                                                                                                                                                                                                                                                             /note=
Misc-difference 427
                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nephila clavipes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Spider; orb-weaver; silk protein; pETNcDS; structural protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spider recombinant silk protein pETNcDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB82611;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB82611 standard; Protein; 528 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245 AGSMVNDKTLMEGVSLTYKEGTKVYTSTQVGKEFQFT 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                BUTLER M M.
US SEC OF ARMY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IGSKI-----GQSMDQQDKIKLNQSLEKVKAGQVT
                                                                                                                                                                          ARCIDIACONO S.
                                                                                                                                                                                                MELLO C M.
                                                                                                                    Arcidiacono S,
                                                                                                                                                                                                                                                                                                                              /note= "encoded by GAG"
                                                                                                                                                                                                                                                                                                                                                                                     "encoded by TAT"
                                                                                                                    Butler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94
   acid
                               for
```

Ż

```
RESULT 12
ABB69847
                    Ş
                                                                                       SSSSS
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                          Query Match
Best Local S
Matches 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                                                                                                                      The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of
                                                                                                                   The sequence data for this patent did not form specification, but was obtained in electronic f
                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 36333;
                                                                                                                                                                                                                                                                           New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                        WPI; 2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                       11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                  23-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                              27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB69847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABB69847 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               benign
                                                                                       Sequence
                                                                                                           at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                     insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                  (PEKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           İs
                                                                                                                                            ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320 QGAGAAAAAAAAGGAGQGGLGGQGAGAAAAAAAGGAGQGGLGGQGAGQ 366
  11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           easy
QEVGAATGAVVGGVAGQ--LFGKGSGRVSMAIGGAVLGGLIGSKIGQ
                                                                                                                                                                                                                                                                                                                                                                 ) PE
                                                                                                                                                                                                                                                                                                                                            JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              s in better recovery of protein at higher purity (70-99%), y to scale up, and the fibres are spun in an environmentally solution reducing hazardous waste accumulation and cost.
                                                       Similarity
                                                                                                                                                                                                                                                                                                           ABL13950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                  CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           528 AA;
                                                                                       147
                                                                                                                                                                                                                                                                                                                                            Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                      2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first
                                                                                       Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
                                                     10.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10.6%;
                                                                                                                                                                                                                                                                                                                                            Ľ
                                                                                                                                                                                                                                                                                                                                            , dwd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      biology;
                                                                                                                                                                                                                                                                           detection reagent for detecting 1000 for elucidating cell signalling and o
                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                147
                                          Score 87.5; D
Pred. No. 0.19
L8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 88;
Pred. No.
                                                                                                                                                                                                                                          21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                           Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 36333
                                                                                                                                                                                                                                                                                                                                            Ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
1.87;
                                                     DB
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19;
                                            38;
                                                                 22;
                                                                                                                       format
                                                                                                                     part of the printed format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                           Indels
                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71
                                            39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                           0 or more cell-cell
                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                        WIPO
                                                                                                                                                                                                            S
                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
```

```
RESULT 13
ABB66232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Qy
 DЬ
                     Qy
                                                 밁
                                                                       Qy
                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                Matches
                                                                                                                        Query Match
                                                                                                                                                                                                         The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventiuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLIG176-ABL30511), expressed DNA sequences (ABLIG187-ABBT2072).
                                                 2124
                                                                                                                                                                       The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                        Disclosure; SEQ ID NO 25488; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                        New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-656860/75.
N-PSDB; ABL10335.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB66232 standard; Protein; 2309
2179 GSVGQS----GGGGQGRYPTPIQRPNNYPQHP----QQQQQQQQQQQQQQREQAAAAAVAA
                                                                                                                                                                                                                                                                                                                                                                                                                                    Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABB66232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142 IYGTACPQPDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            83
                        79 IKLNQSLEKVKAGQVTRWRNP-DTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAG
                                                                        22 QNFSRQEVGAATGA---VVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VYGTPAP-PTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCR-EFQQKAMIAGQKQE 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QSLPQQQQQQ-----
                                                                                                34;
                                                                                                             Similarity
                                                                                                                                                2309 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Adams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      developmental biology;
                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-191637P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152
                                                                                                                                                                                                                                                                                                                                                                                                                                   ĭ
                                                                                                           10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Ę.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                    PWD,
                                                                                                                                                                                                                                                                                                                                                           detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                              18;
                                                                                                            Score 86.5;
Pred. No. 8
                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                   Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -QQQQQQQLQQQHGHAPLQQQASI-GSGLG 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ID NO
                                                                                                            5
                                                                                                                        DB
                                                                                                                        22;
                                                                                                55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25488
                                                                                                  Indels
                                                                                                                        Length 2309;
                                                                                               17;
                                                                                                                                                                                                                                                                                               reagent
                                                                                                                                                                                                                                                                       invention alling and
                                                                                               Gaps
                        137
                                                 2178
                                                                                                                                                                                      WIPO
                                                                                                                                                                                                                                                                                     is
                                                                                               5
```

Dβ

138

QKQE 141

```
DЪ
                                Qy
                                                        В
                                                                             δ
                                                                                                     Вþ
                                                                                                                          δÃ
                                                                                                                                                                                               Ouery Match
Best Local
                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
ABB61254
    1023 OKKPRYFVAMFDYDP
                                119
                                                                                                                                                                                            Sequence
                                                                                                                                                                                                           The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                      972
                                                                                                   915
                                                                                                                                                                                                       at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                  capable of detecting 1000 or more genes from Drosophila. The invent useful in developmental biology and in elucidating cell signalling insecticides, therapeutics and pharmaceutical drugs. The invent of discloses genomic DNA sequences (ABLI16176 ABLI30511), expressed DNA ABRIGATORS and the encoded proteins
                                                                                                                                                                                                                                               sequences (ABL01840
(ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                       The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invent
                                                                                                                                                                                                                                                                                                                                       Disclosure; SEQ ID NO 10554; 21pp + Sequence Listing; English.
                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                               New isolated nucleic acid genes from Drosophila and interactions -
                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Venter JC, Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PEKE ) PE CORP NY.
                                                                                                        1 MRGCLOGSSLIIISVFLVGCAQNFSROEVGAATGAVVGGVAGGLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W0200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster polypeptide SEQ ID NO 10554.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABB61254 standard; Protein; 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB61254;
                   QERROQYCREFQQKAMIAGQKQEIYGTACPQPDG 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2231 QRAQ 2234
                                    PGQMMGPRGPLNQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQPG----QQAQPG-----QPGQPGQMPGA 1022
                                                     LGGLIGSK--IGQSMDQODKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 118
                                                                                  МОСОМОСОМОСОМЯСОМРС---ОМРООМРООМРООМАСОМРООМРООМРООМРООМРООМЯСОМ
                                                                                                                                                                                                                                                                                                                                                                                                                          2001-656860/75
)B; ABL05357.
                                                                                                                                                        Similarity
                                                                                                                                                                                          1251 AA;
                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-191637P.
2000US-0614150.
                                                                                                                                                    10.18; 22.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PWD,
                                                                                                                                          28;
                                                                                                                                                                                                                                                                                                                                                                       detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                     Score 84; DB;
Pred. No. 7.1;
28; Mismatches
-STMSPNPDG 1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myers
                                                                                                                                                DB
7.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      EW;
                                                                                                                                                            22;
                                                                                                                                     67;
                                                                                                                                                        Length 1251;
                                                                                                                                   Indels
                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                      invention
                                                                                                                              Gaps
                                                                                                          60
                                                                                   971
                                                                                                                                                                                                                                                                                           and
                                                                                                                              5
                                                                                                                                                                                                                                                                                                       Sī
```

```
Search completed: October Job time : 23.6891 secs
                                                      В
                                                                            Qγ
                                                                                                     멍
                                                                                                                       Qγ
                                                                                                                                                                                                 Query Match
Best Local s
Matches 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
AAY11028
                                                                                                                                                                                                 Offs are shown. The proteins are variously cell envelope proteins, cytoplasmic proteins, secreted proteins or other cellular proteins. Vaccines containing the nucleic acids or proteins are claimed, as are probes containing at least 8 nucleotides from the nucleic acid sequences. The vaccines are useful for treating or reducing the risk of detecting the probes can be used diagnostically for also of use in screening for compounds having the ability to interfere with the H. pylori life cycle or to inhibit H. pylori infection.
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                            Recombinant or substantially pure preparations of H. pylori polypeptides are disclosed, together with the nucleic acids encoding them. In all,
                                                                                                                                                                                                                                                                                                                                                    Claims 37, 41; Page 190-191; 339pp; English.
                                                                                                                                                                                                                                                                                                                                                                          New isolated Helicobacter pylori nucleic acids - use products for the diagnosis, prevention and treatment H. pylori and other Helicobacter species
                                                   68
                                                          61 LGGLIGSKIGQSMDQODKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRY 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-JUL-1997;
05-DEC-1996;
25-MAR-1997;
                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1998-333051/29.
N-PSDB; AAX30557.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alm RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vaccine;
secreted
                                                                                                                         \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ASTR ) ASTRA AB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09824475-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H. pylori ORF 01cp20708_10628177_c2_50 secreted protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY11028;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY11028 standard; Protein; 116 AA.
                                                                                 MSGLRTFSCVVVLCGAMVNVAVAGPKIEARGELGKFVGGAVGNFVGDKMGGF---VGGAI 67
                                                                                                       MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                         -GGYIGSEVGDRV--EDYIRGVDREPONKEPQTPR-
                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Castriotta
                                                                                                                                                                                           116 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  probe; diagnostic; ORF; cell envelope protein;
protein; cytoplasmic protein; cellular protein
                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pylori.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-0891928.
96US-0759625.
97US-0823745.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97WO-US22104
           27,
                                                                                                                                                      10.0%;
                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Doig
                                                                                                                                    Score 83; DB 19;
Pred. No. 0.42;
6; Mismatches 51
         10:57:56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kabok z,
                                                                                                                                     51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Smith D;
                                                                                                                                                           Length 116;
                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                  used to develop
ent of infection
                                                                                                                                  18;
                                                                                                                               Gaps
                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                    Ьy
                                                                                                                               4.
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                           SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          October 27, 2002, 11:00:01; Search time 18.0743 Seconds (without alignments) 1540.986 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562222 seqs, 172994929 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-677-374-4
832
1 MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                    sp_plant:*
sp_rodent:*
sp_virus:*
                                                                                                                                      sp_organelle:*
sp_phage:*
                                                                                                                                                                                          sp_mammal: *
                                                                                                                                                                                                           sp_human:*
sp_invertebrate:*
                                                                                                                                                                         sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                        562222
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

16	15	14	13	12	11	10	9	8	7	σ	. ເ	4	ω	2	_	1 20	Result
127.5	137	139	216.5	235.5	236.5	236.5	239	244	251.5	251.5	252.5	258.5	283	303.5	815	arose	
15.3	16.5	16.7	26.0	28.3	28.4	28.4	28.7	29.3	30.2	30.2	30.3	31.1	34.0	36.5	98.0	March	Query
182	199	77	105	131	131	131	151	154	144	137	144	137	159	148	162	renden	Query
16	16	N	N	N	N	N	N	2	N	N	N	N	N	2	2	- 6	;
Q9HXI3	Q985G4	Q9AGC7	031208	Q9L522	Q52637	Q9F0Q1	Q9F9Q9	Q53154	Q9K4W8	031065	Q9K2N6	052252	Q9F9F2	054381	Q9F9K8	10	;
Q9hxi3 pseudomonas	Q985g4 rhizobium l	Q9agc7 rickettsia	O31208 rickettsia	Q91522 rickettsia	Q52637 rickettsia	Q9f0q1 rickettsia	Q9f9q9 rickettsia		Q9k4w8 male-killin	O31065 rickettsia	Q9k2n6 male-killin	O52252 rickettsia	Q9f9f2 rickettsia	O54381 rickettsia	Q9f9k8 pisciricket	pescription	

Compo pagacomonas	Commence	Ş			ī
Ochumo providence	16 090000	00	10 4	7	л
09vs43 drosophila	5 09VS43	147	10.5	87.5	=
	5 046171	544	10.6	88	ω
_	16 Q9PGD9	242	10.8	89.5	2
	16 Q9HU07	137	10.8	90	Ξ
Q983y0 rhizobium l	16 Q983Y0	105	10.9	91	Ö
Q98p93 rhizobium 1	16 Q98P93		11.2	93	39
Q9al49 shigella fl	o		11.2	93.5	8
	10 Q9SUX1		11.3	94	7
		172	11.4	95	6
Q92nt4 rhizobium m	16 Q92NT4	79	11.5	95.5	5
		223	11.7	97	4
\mathbf{c}	2 Q9XAX8		11.7	97	ü
Q9cn83 pasteurella			11.8	98	2
			11.9	99	ĭ
Q91762 pseudomonas			12.0	99.5	ö
	16 Q92LP2	83	12.0	99.5	9
Q9a8m8 caulobacter		257	12.1	100.5	8
	2 069776	153	12.1	100.5	?
Q9xca4 porphyromon	2 Q9XCA4	223	12.3	102.5	9
	2 Q52854	139	12.5	104	25
	_			105	24
Q9ra95 serratia sp	2 Q9RA95		12.8	106.5	3
Q92st9 rhizobium m	σ			108.5	2
	2 Q9F6B1		13.0	108.5	2
Q9pgx0 xylella fas	σ			109	0
		232	13.1	109	9
Q9i4s1 pseudomonas	16 Q9I4S1	154	13.4	111.5	8
Q92r89 rhizobium m	16 Q92R89	136	14.5	120.5	7

3333333333333333

ALIGNMENTS

QSP9K8 PRELIMINARY; PRT; 162 AA. QSP9K8; QSP9K8; QSP9K8; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; QSPAR; Q	0y 0y 0b	Qy	Que Bes Mat	DR SQ	RT	RA C	RP	×	88	SO	GN DE	D,	Di di	A I i	RESUL
ie ie 22	62 63 122 123	ω Ν	0%; Score 815; DB 2; Length 162; 8%; Pred. No. 1.5e-65; 1; Mismatches 1; Indels		"Identification of a genus-common Rickettsial surface antigen salmonid pathogen Piscirickettsia salmonis.";							01-MAR-2001 (TrEMBLrel. 16,	01-MAR-2001 (Trembtrel. 16,	Q9F9K8 PRELIMINARY; PRT;	RESULT 1 O9F9K8
					the				ı d ı						

```
RESULT

Q9P979

ID Q99

DT Q99

DT Q1

DT 01

                                            Ъ
                                                                                              δÃ
                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
0543
AC 0543
AC 0543
DT 01-J
DT 01-J
DT 01-J
DT 01-R
CS Rick
OC Bact
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick
OC Rick

                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9F9F2
Q9F9F2;
Q9F9F2;
O1-MAR-2001 (TrEMBLTel. 16, Cr
O1-MAR-2001 (TrEMBLTel. 16, La
O1-DEC-2001 (TrEMBLTel. 19, La
17 KDA GENUS-COMMON ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                              spotted fever group.";
Int. J. Syst. Evol. Microbiol. 51:339-347(2001).
EMBL; AF195118; AAG28452.1; -
SEQUENCE 159 AA; 16497 MW; 34C5B020AF470A1F (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
MEDLINE=21217364; PubMed=11321078;
BOUYEr D.H., Stenos J., Crocquet-Valdes P., Moron
Zavala-Velazquez J.E., Foil L.D., Stothard D.R., A
                                                                                                                                                                                                                                                                                                                                               "Rickettsia felis: molecular characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia felis (Rickettsia azadi).
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                   8 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                             Local
                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Curr. Mi
EMBL; U7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O54381;
O54381;
O1-JUN-1998
O1-JUN-1998
O1-NOV-1998
17 KDA COMMOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia sp.
Bacteria; Proteobacteria; alpha subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIINE=98087556; PubMed=9425244; Davis M.J., Ying Z., Brunner B.R., Pan "Rickettsial relative associated with Curr. Microbiol. 36:80-84(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. MEDLINE=98087556;
SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 NKOGSGTLIGGTLGGLVGSQFGGGTGRLAAVGAGALLGAILGNQIGAGMDEQDRKLAELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQODK----IK 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KAYGTACROPDGQWQVV 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EIYGTACPOPDGRWQVI 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KDA COMMON-ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY-----KNNTGQYCREYTQTVVVGGKQQ
                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ____076907; AAC02809.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
55; Conserv
                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 16, Creat
(TrEMBLrel. 16, Last
(TrEMBLrel. 19, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148
148 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrembLrel. 06, C
(TrembLrel. 06, I
(TrembLrel. 08, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                              34.0%;
37.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148
; 15050 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36.5%;
40.1%;
                                                                                                                                         30;
                                                                                                             Pred. No. 0.70
30; Mismatches
                                                                                                                      Score 283; DB 2; I
Pred. No. 6.9e-18;
0; Mismatches 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                 34C5B020AF470A1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 303.5;
Pred. No. 9.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A7AFEEFDEOAEEE4C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PŘT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pantoja A., Ferwerda F.H.; ith papaya bunchy top disease.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .2e-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43;
                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                     ۵
                                                                                                                                                                                                                                                                                                                                                                                                a C.G., Popov V.L., Azad A.F.,
                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                         new member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148;
                                                                                                                                                                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                            the
   63
                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
```

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                           O9K2N6;
O1-OCT-2000 (TrEMBLrel. 15, Created)
O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
T7KDA ANTIGEN (17 KDA ANTIGEN) (FRACKENT).
male-killing Rickettsia from Adalia bipunctata.
Bacteria, Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                  SEQUENCE FROM N.A.

Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,

Schulenburg H.J.G.V.D., Majerus M.E.N.;

Bertrand D., Hurst G.D.D., Majerus M.E.N.;

"On the evolution of male-killing; Monophyletic origin and horizontal transfer of male-killing Rickettsia (a-Proteobacteria) from two contents of the decomposition of the confection o
NON_TER
             Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases EMBL; AJ269518; CAB96383.1; -EMBL; AJ269517; CAB96382.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9K2N6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Molecular characterization of a novel spotted fever group rickettsial species from ixodes scapplaris in Texas.", Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.

EMBL; AF031534; AAB95267.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
17 KDA ANTIGEN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=69410;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; alph
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia_cooleyi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GKQQKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GQKQEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AELTSQRALEAAPSGSSTEWRNPDNGNYGYVTPNKTY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGLWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KQERRQQYCREFQOKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAVLGGQIGAGMDEQDRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31.1%;
39.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 258.5;
Pred. No. 9e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---RNSTGQYCREYTQTVVIG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
```

```
RESULT
Q9K4W8
ID Q9
AC Q9
DT 01
DT 01
DT 01
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
 Q9K4W8;
Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AFO
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Rickettsia honei sp. nov., the aetiological spotted fever in Australia."; Int. J. Syst. Bacteriol. 48:1399-1404(1998). EMBL; AF027124; AAB81846.1; -- EMBL; AF060706; AAD20231.1; -- EMBL; AF060704; AAD20230.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=99045882; PubMed=9828442; Stenos J., Roux V., Walker D., Ra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
17 KDA ANTIGEN (17 KDA PROTEIN) (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Billings A.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia honei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O31065; Q9WW02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   031065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-TT-118;
                                                                                                                                                        124
                                                                                                                                                                                          140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                               25
                                                                                                                                                        QKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTACPQPD 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                          QEIYGTACPQPD 151
                                                                                                                                                                                                                           TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                        KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                             NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OKAYGNACROPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 Similarity
52; Conser
                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SEP-1997) to t
                                                                                                                                                                                                                                                                                                                                                                                                                                  137 AA; 14167 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
 (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>۶</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Walker D.,
                                                                                                                                                                                                                                                                                                                                                                               30.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30.3%;
     15,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Teel P.D., Walker D.H
he EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MW.
                                                                                                                                                                                                                                                                                                                                                               24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24;
 Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                                                                                                                                             Score 251.5;
Pred. No. 3.8e
24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 252.5;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the aetiological agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C8254739CCA56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                  75BC1D0D745B428C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                      144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.3e-15;
                                                                      ₹
                                                                                                                                                                                                                                                                                                                                                                                .8e-15;
                   update)
                                                                                                                                                                                                                                                                                                                                                                                                  DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
   update)
                                                                                                                                                                                                                                                                                                                                                               45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 144;
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of Flinders Island
                                                                                                                                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                   В
                                                                                 δÃ
                                                                                                                      Вb
                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q53154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                 Q
                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                        MEDLINE=93084757; PubMed=1452600,
MEDLINE=93084757; PubMed=1452600,
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ste
Baird R.W., Lloyd M., Stenos J., Ross B.C., Ross B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., Stenos B.C., S
                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLIND-20575219; PubMed=11133455;
Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
"Incidence of male-killing Rickettsia spp. (alpha-Proteobacteria)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 KDA ANTIGEN (FRAGMENT).
male-killing Rickettsia from Adalia decempunctata
Bacteria; Proteobacteria; alpha subdivision; Rick
Rickettsiaaee; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOY-1996 (TrEMBLrel. 01, Created)
01-NOY-1996 (TrEMBLrel. 01, Last sequence update)
01-NOY-1998 (TrEMBLrel. 08, Last annotation update)
01-NOY-1998 FISF 1), 5' END CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the Ten-Spot Ladybird Beetle Adalia decempunctata Coccinellidae).";
Appl. Environ. Microbiol. 67:270-277(2001).
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiaceae;
NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q53154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=120393;
                   118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                   64
                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                      5
                                                                                                                                                      æ
KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QKSYGNACRQPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                 GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNST
                                                                                                                                                    SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                     GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                      SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AJ269516; CAB96381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
52; Conserv
                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14801 MW;
                                                                                                                                                                                                      29.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                alpha subdivision;
                                                                                                                                                                                          31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24;
                                                                                                                                                                                      Score 244; DB 2;
Pred. No. 2.1e-14;
1; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 251.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C825472F16A56AE7 CRC64;
                                                                                                                                                                                                                                                          F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No. 4.1e-15;
smatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                           Stewart R.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                               human
                                                                                                                                                                                                                      Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                             spotted fever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Coleoptera:
```

11;

Gaps

4.

in

75

Dwyer B.;

16;

Gaps

6

61 63

Б

```
RESULT | Q9F0Q1 | ID F0Q1 | AC Q9 | DT Q9 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT Q1 | DT
                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
Q9F909
AC Q9
DT Q9F909
DT Q9
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1
DT Q1

                                                                         Query Match
Best Local s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                SEQUENCE
                                                                                                                                                                                      STRAIN-CALIFORNIA 2;
ROUX V., Raoult D.;
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases
EMBL; AF210693; AAG48554.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O9FOQ1 PRELIMINARY; PRT; 131 AA.
O9FOQ1; (TrEMBLrel 16, Created)
O1-MAR-2001 (TrEMBLrel 16, Last sequence update)
O1-MAR-2001 (TrEMBLrel 16, Last annotation update)
17 KDA PROTEIN (FRAGMENT).
Rickettsia sp. California 2.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiaceae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
       بو-.
ان
                                                                                                                                                                                                                                                                                                      Raoult D.;
"A new SPG rickettsia isolated from fleas.";
"hmitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-CALIFORNIA 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF1
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQP 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF181036; AAG09427.1; -. NON_TER 151 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9F9Q9
Q9F9Q9;
01-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WALISSON K., Pahlson C.;
"Novel peptide diagnostic reagent and rickettsiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nilsson K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria; alpha subdivision; Rickettsiaces; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID-35789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OUTER MEMBRANE PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  u
                                                  49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVLGGQIVAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RNSTGQYCREYTQTVVIGGKQQKAYGNACRQP 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-YGYGYGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GQD-----CRVYTQTVVIGGKQQKAYGNACRQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
55; Conserv
                                                                                                                                        131
131
                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151 AA;
                                                                                                                                        ĀĀ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TremBLrel 16, Created)
(TremBLrel 16, Last seq
(TremBLrel 16, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                             131
                                                                                                                                 13374 MW;
                                                     28.4%; Score 236.5; 38.3%; Pred. No. 8e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15621 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28.7%;
                                        24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28;
                                                                                                                  23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 239; DB 2;
Pred. No. 5.7e-14;
8; Mismatches 54
                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B77407B9C71E4B39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                  8e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kit for detection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151
                                                                    DB 2; Length 131;
                              44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54;
                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                      11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63
               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6,
RESULT

Q94.55.2

ID Q9

AC Q9

DT 0:

DT 0:

DT 0:

CO F

OC F

OC F

OC F

RP

RP

RP

RP

RA

RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Дd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25
```

```
Q9L522 PRELIMINARY; PRT; 131 AA.
Q9L522;
Q9L522;
Q1-CCT-2000 (TremBLrel. 15, Created)
Q1-CCT-2000 (TremBLrel. 15, Last sequence update)
Q1-DEC-2001 (TremBLrel. 19, Last annotation update)
Q1-DEC-2001 (TremBLrel. 19, Last annotation update)
Q1-Market ANTIGEN (FRAGMENT).
               SEQUENCE FROM N.A.
STRAIN-DABIOOR;
MEDLINE-21091941; PubMed=11157215;
Simser J.A., Palmer A.T., Mindacio
                                                                               Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID-47589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q52637;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NOV-1998 (TrEMBLrel. 08, Last annotation update)
17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            beetle (Adalia bipunctata).",
J. Bacteriol. 176:388-394(1994).
EMBL: U04162; AAA19235.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Rickettsial relative associated with male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=94117373; PubMed=8288533;
Merren J.H., Hurst G.D., Zhang W.,
                                                                                                                                                                                                                                                                                                                                                140 QEIYGTAC
                                                                                                                                                                                                                                                                                                                                                           69 TSORALBAAPSGSNVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                      80 KLNOSLEKVKAGOVTRWKNPDTGNSYSVEPVRTYORYNKQERROQYCREFOQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                         10 NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQTGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 QKAYGNAC 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 QEIYGTAC
                                                                                                                                                                                                                                                                                                                   QKAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                        69 TSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
49; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131
131 AA;
     Palmer A.T., Munderloh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                              147
                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13344 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28.4%; 38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 236.5;
Pred. No. 8e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlDCF71050DF52DF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
     C
.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Breeuwer J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8e-14;
 Kurtti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               killing in the ladybird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44;
 ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stouthamer R:,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         68
                                                                                                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
```

٠,٠

```
RESULT
031208
ID 208
ID 208
AC 03
AC 03
AC 03
AC 03
AC 04
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT
RESULT
Q9AGC7
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 17
OS R1
OC BB
                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFFICE
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                   Q9AGC7
Q9AGC7;
Q9AGC7;
O1-JUN-2001 (TrEMBLrel. 17, C:
O1-JUN-2001 (TrEMBLrel. 17, L:
O1-JUN-2001 (TrEMBLrel. 17, L:
O1-JUN-2001 (TREMBLRENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appl. Er
EMBL; AF
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-98367252; PubMed-9701930; Billings A.N., Yu X.J., Teel P.D., Walker D.H.; "Detection of a spotted fever group rickettsia (Acarl: Ixodidae) in south Texas."; J. Med. Entomol. 35:474-478(1998).
EMBL; AF033499; AAB86943.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiaceae; Rickettsieae; NCBI_TaxID-69475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       031208;
01-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-LA COPITA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    031208
  Bacteria; Proteobacteria;
                        Rickettsia typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'Isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                              55
                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25
                                                                                                                                                                                                                                                                                                                                                                                         42 GQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              solation of a spotted fever group rickettsia, Rickettsia peacockii, a Rocky Mountain wood tick, Dermacentor andersoni, cell line.";
pl. Environ. Microbiol. 67:546-552(2001).
                                                                                                                                                                                                                                                                                                                                                   w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 79
                                                                                                                                                                                                                                                                                                                                                   GQLVGVGV-----
                                                                                                                                                                                                                                                                                                      NPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPD 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OKAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QEIYGTAC 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                NPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Environ. Microbiol. 67:5
AF260571; AAF69012.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                        46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105
105 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   105
11236 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13413 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      26.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.3%;
                                                                                                                                                                                                                                                                                                                                                   -GALLGAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWR
  alpha subdivision;
                                                                                                                                                                                                                                                           -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Score 235.5; DB 2
; Pred. No. 9.8e-14;
24; Mismatches 44
                                                            Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 216.5; DB 2
Pred. No. 3.7e-12;
                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7BDD35104701D4FB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               228C020550CAA9D0
                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105
                                                                                                                                                    77
                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNSTGQYCREYTQTVVIGGKQ
                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsiales;
  Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Amblyomma cajennense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                    17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                              103
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                   54
                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ψ
```

```
RESULT
Q985G4
Search completed: October Job time: 18.0743 secs
                                            Дb
                                                               Qγ
                                                                                      DЬ
                                                                                                          γ
                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                               Query Match
Best Local :
                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

Paspallaris V., Liedtke B., Vitetta L., Whiting J.L.;

"Rickettsia typhus and Rickettsia felis rickettsloses in Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF336794; AAK21272.1; -.

NON_TER

1
1
1
NON_TER
77
77
77
                                                                                                                                                                                                                                                                                                                                                                                                                  01-0CT-2001
01-0CT-2001
01-0CT-2001
                                                                                                                                                                              EMBL; APO
Complete
SEQUENCE
                                                                                                                                                                                                                                       Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M., Takeuchi C., Yamada M., Tabata S.;
                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=MAFF303099;
MEDLINE=21082930; PubMed=11214968;
                                                                                                                                                                                                                                                                                                                                                             Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision;
Phyllobacteriaceae; Mesorhizobium.
                                                                                                                                                                                                             "Complete genome structure of the nitrogen-fixing Mesorhizobium loti."; DNA Res. 7:331-338(2000).
                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                               MLR7687
                                                                                                                                                                                                                                                                                                                                                                                                         MLR7687 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q985G4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q985G4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                           152
                                                                105 YSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                        92
                                                                                                              49
                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97 RNPDTGNSYSVEPVRT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42 GQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSQFGHGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLVELTSQRALESAPSGSNIEW
                                           GEVVPAQPY - RVGSQD-
                                                                                                             SGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDTGNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RNPDNGNHGYVTPNKT
                                                                                        SGKVTKSIISAMDGGLIGGSIGNGLSDEEKRSALEAEYKALEYTTSGQKVAWKGDQASHY
                                                                                                                                                                                                   AP003012; BAB54098.1; -.
                                                                                                                                   34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30;
                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                        proteome
                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77 AA;
                                                                                                                                                                              199 AA;
                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7955 MW;
                                                                                                                                                                              20517 MW;
                                                                                                                                           16.5%;
30.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16.7%;
39.5%;
          27,
                                                                                                                                                                                                                                                                                                                                                                                                                   18,
18,
          2002,
                                           -CRQYTQTVFTGGAGVTARGTACRNADGSW
                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence update)
Last annotation updat
                                                                                                                                           Score 137;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B1E447C037263918 CRC64
          11:10:22
                                                                                                                                                                              98E6F20A734637AA CRC64;
                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                  DB 16;
).00011;
nes 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA
                                                                                                                                                                                                                                                                                                                                                                        Rhizobiaceae group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                       Length
                                                                                                                                                                                                                                    symbiotic
                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77;
                                                                                                                                                         199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Australia.";
                                                                                                                                   10;
                                                                                                                                                                                                                                      bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6,
                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                        151
                                                                                                              104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ψ
                                                                                                                                   ω
```

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90:
        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B B
     seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-677-374-4
832
1 MRGCLQGSSLIIIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   October 27, 2002, 11:00:36; Search time 6.11744 Seconds (without alignments) 1019.028 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105224 seqs, 38719550 residues
     SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MRGCLQGSSLIIISVFLVGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
     GenCore version 5.1.3 (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapext 0.5
17KD_RICPR
17KD_RICUA
17KD_RICUA
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RICAD
17KD_RASIN
17KD_BCOLI
17KD_BOVIN
17KD_BCSU
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
17KB_CANAL
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                    O52764 rickettsia
P05372 rickettsia
P05372 rickettsia
P05372 rickettsia
P05928 rickettsia
P50930 rickettsia
P50931 rickettsia
P50927 rickettsia
P50927 rickettsia
P50927 rickettsia
P50927 rickettsia
P50927 rickettsia
P50927 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 ricke
                        P509288
P50930
P50931
P50931
P50931
P50927
P31484
Q535499
Q535499
P55741
P10357
P10394
P65394
P65394
P65394
P65331
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
P17853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P16624 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                     1 mus musculu
9 caenorhabdi
5 bos taurus
5 homo sapien
5 escherichia
nephila cla
                                                                                                                                                                          7 saccharomyc
7 aquifex aeo
8 rattus norv
6 bluetongue
                                                                                                                               SOS
                        Query Match
Best Local S
Matches 61
                                                                                                                          CHAIN
LIPID
SEQUENCE
                                                                                                                                                                                                      EMBL; M28482; AAA26378.1; ALT_SEQ.
EMBL; AJ235273; CAA15258.1; -.
PIR; D33971; D33971.
PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal; Complete proteome.
SIGNAL 1 19
```

Similarity 61; Conserv

Conservative

34.6%; Score 288; DB 1; 1 37.9%; Pred. No. 3.1e-18; 37.9%; Mismatches 52;

DB 1; Length 159;

Indels

16;

Gaps

6;

20 20 159

159 17 KDA SURFACE ANTIGEN. 20 N-ACYL DIGLYCERIDE (PRO 16672 MW; A33D404B65EEB071 CRCC

(PROBABLE). CRC64;

AA;

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	RETERMENT	1 R B
SEQUE STRAIL STRAIL ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI ANDELI AND		34 35 36 36 37 37 38 39 40 41 42 42 43 43 45
NEMADINE FINAL STATE AND NEMADINE FINAL STATE AND STATE AND STATE AND STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE AND ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDRESS OF THE STATE ADDR	17KD_RICPR 17KD_RICPR 17KD_RICPR 01-AUG-1990 (Rel. 01-AUG-1991 (Rel. 16-OCT-2001 (Rel. 17 kDa surface an OMP OR RP833. Rickettsia prowaz Bacteria; Proteob Rickettsiaceae; R NCBI_TaxID=782; [1] SEQUENCE FROM N.A STRAIN=MADRID E; MCBI_TaxID=89359171; Anderson B.E. Tz "Comparative sequene.";	77.5 77.5 77.5 77.5 76.5 76.5 76.5 76.5
FROM N.A. ADRID E; 99039499; Pubm 7 S.G.E., Zomo A.S., Winkle Jirla."; 16:133-140(199 ELLULAR LOCATION Or (Probable). The Swiss Insoen pon-profit i and this stat requires a li nemail to li	STA el. el. ant ant waze eoba ; Ri ; Ri ; Tzi Tzi eque	+ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
N.A. D E; A N.A. D E; A Sp; PubMed=9823893; B E; Zomorodipour A; Comorodipour A; Minklar H.H., Kur equence of Rickettsi AR LOCATION: Attache Probable) OT entry is copyrigh Swiss Institute of B Bioinformatics Institutions this statement is no ires a licensee agree mail to licensee isb-s	NDARE 115, C 119, I 40, I igen igen cteri cteri ckett ckett	359 447 543 553 553 553 553 553 553 553 553 553
Att. Copy Copy Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos I Cos	Created) Last seque Last annot precursor ria; alpha ria; alpha ttsieae; Ri ded=2768201 oos T.; analysis o	
bMed-9823893; morodipour A Ande Alsmark U.C.M. Poo ler H.H. Kurland C of Rickettsia prow 998). TION: Attached to t). y is copyright. It nstitute of Bioinfo rmatics Institute. institutions as lo atement is not remo license@isb-sib.ch)	PRT; uence otatio or. a subd a subd Ricket Ricket	ATPA_BOVIN HEM1_MYCLE ATPA_RAT ATPA_HUMAN CANS_RABIT ATPA_MOUSE IF2M_HUMAN CCAD_BOVIN CCAD_DROME VP5_BTV10 ALIGNMEN
rss dow aze aze aze rma rma rma ved	mr; 159 AA. nce update) ation update) subdivision; Rick ckettsia. ckettsia.	A_BOVIN I_MYCLE A_RAT A_RAT A_HUMAN S_BABIT S_BOVIN O_DOUSE A_MOUSE A_MOUSE A_MOUSE D_DROME D_DROME D_DROME ALIGNMENTS
ersson J.O., Naeslund C.G.; wazekii and the origin the outer membrane by the outer membrane are no restring ong as its content i oved Usage by and (See http://www.isb-si.		
and the ori- ar membrane ar membrane buced throug a and the ar and res its content Usage by a tp://www.lsb		
the origin of the origin of imbrane by a lipi imbrane by a lipi through a colla d the EMBL outs no restrictions content is in by and for co www.isb-sib.ch/a	ettsiales; rickettsial	P19482 P15794 P15705 P06813 P194813 Q03265 Q042813 Q042813 Q042813 Q042813 Q042813 P104985
, printed in the	antigen	
d boral tatio on no on no on no on	ē B	bos taurus mycobacteri rattus norvo sapien oryctolagus bos taurus musculu homo sapien bos taurus drosophila bluetongue
tion on - its way vay		

망 Š B δÃ В δĀ

118

64 62

Ģ

œ

01-NOV-1997 01-NOV-1997 17 kDa surfa Q52764; 01-NOV-1997

(Rel. (Rel.

17KD_RICJA

STANDARD;

Rickettsia

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDILINE-95,229950; PubMed=7714214; Furuya Y., Katayama T., Yoshida Y., Kaiho I.; Specific amplification of Rickettsia japonica DNA from clinical specimens by PCR."; Clin. Microbiol. 33:487-489(1995).

-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsia japonica.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID-35790;
                                                                                                                                                                                         KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                 -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                 GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                         GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                    SKIMITALATSMLOACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGTGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                              SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kDa surface antigen precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane; Lipoprotein;
L 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGOSMDQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYORYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKIMITALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35, Created)
35, Last sequence update)
35, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                            34.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                              32;
                                                                                                                                                                                                                                                                                                                                                                                                               Score 286; DB 1; pred. No. 4.6e-18; 2; Mismatches 52;
                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     158
                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                        6;
                         무료 무료 보고 No. Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control 
                     CONFLICT
                                                               CHAIN
                                                                                                            SIGNAL
                                                                                                                                                                                       EMBL: AE008675; AAL03825.1; --
EMBL: M16486; AAA26381.1; --
EMBL: J03371; --
PIR: A25972; A25972.
PIR: A31836; A31836
PIR: A33971; A33971.
PIR: D30871; A33971.
                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                      EMBL; M28479; AAA26379.1; -. EMBL; M28480; AAA26376.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Anderson B.E., Regne
Fu Z.Y., Bellini W..
"Sequence analysis crickettsii.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modification."

J. Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-89008059; PubMed=3139629;
Anderson B.E., Baumstark B.R., Bellini W.J.,
"Expression of the gene encoding the 17-kilodalton antigen
Rickettsia rickettsii; transcription and posttranslational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPECIES=R.rickettsii;
MEDLINE=89008059; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 1-30 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES=R.rickettsii;
MEDLINE=87222152; PubMed=3108232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPECIES=R.conorii; STRAIN=Malish 7,
MEDLINE=21442074; PubMed=11557893;
Ogata H., Audic S., Renesto-Audiff:
Samson D., Roux V., Cossart P., We
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Mechanisms of evolution in Rickettsia Science 293:2093-2098(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Samson D.,
Raoult D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPECIES=R.conorii, and R.ricketts MEDLINE=89359171; PubMed=2768201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P05372;

01-NOV-1988 (Rel. 09, Created)

01-AUG-1990 (Rel. 15, Last sequence update)

01-MAR-2002 (Rel. 41, Last annotation update)

17 kDa surface antigen precursor.
.6; ...
,71; A339/.
3971; B33971.
2; PS00013; PROKAR_L.,
membrane; Lipoprotein; A
AL 1 19
7N 20 159
20 20
146 146
153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Comparative sequence analysis of a gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
NCBI_TaxID=781, 783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia conorii, and Rickettsia rickettsii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteriol. 171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B.E., Regnery R.L., Carlone G.M., Tzian
Bellini W.J.;
e analysis of the 17-kilodalton-antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B.E., Tzianabos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  170:4493-4500(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169:2385-2390(1987).
                                                                                                                                   PROKAR_LIPOPROTEIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Renesto-Audiffren P., Fournier P.-E., B
Cossart P., Weissenbach J., Claverie J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R.rickettsii;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Attached
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE):
N -> D (IN REF. 3).
G -> E (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                   Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carlone G.M., Tzianabos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to the outer membrane
                                                                                                     Signal; Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                conorii and R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            т.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prowazekii.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McDade J.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Barbe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <
.
```

SEQUENCE FROM N.A.

17KD_RICCN
ID 17KD_RICCN RESULT 3

STANDARD;

.

g Š В γ Db δÃ

120

118

64 62

G œ Query Match Best Local S Matches 61

l Similarity 61; Conserv

Conservative

SEQUENCE

D16515; BAA03965.1;

밁 δ

```
RESULT 4
17KD_RACTY
1D LTND_RACTY
1D LTND_RACG
DT 01-AUG
DT 01-AUG
DT 01-AUG
DT 01-AUG
DT 01-Bactes
OC Ricket
OX NCBL'
RN 4DDLI
RP SEQUE
RT COMPE
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT Gene.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
RT GENE.
R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                δ
                                                    ₽
                                                                                  ş
                                                                                                                          밁
                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                               Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P22882;
01-AUG-1991 (Rel. 19, C
01-AUG-1991 (Rel. 19, L
01-OCT-1996 (Rel. 34, I
                                                                                                                                                                                                                                                                       CHAIN
LIPID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alpi
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00013; PROKAR_LIPOPROTEIN; Outer membrane; Lipoprotein; Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE-89359171; PubMed-2768201;
Anderson B.E., Tzlanabos T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiaceae;
NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M28481; AAA26377.1; PIR; C33971; C33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Comparative sequence analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118
                    140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                      86
                                                                                                                                                               25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                            27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteriol. 171:5199-5201(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLL
                                                                                                                          NKQGTGTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQTGASLDEQDRKLLEL
                                                                                                                                              SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
QEIYGTACPQPDGRWQVIS
                                                    TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                        KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 139
                                                                                                                                                                                                   . Similarity
55; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                 20
20
159 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                        ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antigen precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                            19
159
                                                                                                                                                                                                                                                                        20 N
16549 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16581 MW;
                                                                                                                                                                                               33.2%; Score 276.5; DB 1; 39.6%; Pred. No. 3.1e-17; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 285; DB 1; 2
Pred. No. 5.6e-18;
Pred. No. 5.6e-18;
                                                                                                                                                                                                                                                                       17 KDA SURFACE ANTIGEN N-ACYL DIGLYCERIDE (PRO 08973E2648FD8CD8 CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159
                                                                                                                                                                                                                                                                                                                                            1.
Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    outer
                                                      -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 159;
                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    membrane
                                                                                                                                                                                                                                                                                           (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rickettsial
                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                    RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
 RRN OCC OCC RRN RCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17KD_RICAU
P50928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sanotation update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment).
                                                                                                                                                             01-OCT-1996 (Rel. 01-OCT-1996 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Baird R.W., Ross B.,
Submitted (OCT-1991)
                                     NCBI_TaxID=35792;
[1]
                                                                       Bacteria; Proteobacteria; alpl
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                 P50930;
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M74042; AAA26394.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia australis
 STRAIN=MACULATUM
                    SEQUENCE FROM N.A.
                                                                                                         Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=787;
                                                                                                                                                                                                                                       .7KD_RICPA
                                                                                                                                                                                                                                                                                                                               124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141 QTTYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rd R.W., ROSS B., Dwyer B.;
mitted (OCT-1991) to the EMBL/GenBank/DDBJ databases
SUBCELLULAR LOCATION: Attached to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                       GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                   GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTYRNSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSLIIISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                               KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMIIALAASMLQACNSPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                              surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
59; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PS00013; PROKAR_LIPOPROTEIN; 1.
mbrane; Lipoprotein; Antigen; Signal.
1 19 BY SIMILARITY.
20 >154 17 KDA SURPACE ANTIGEN.
20 20 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                       -GQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
154 AA;
                                                                                                       parkeri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N.A.
                                                                                                                                            antigen
                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                           34,
                                                                                                                                                             34, Last sequence update)
34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32.2%;
                                                                                                                                                                                                 Created)
                                                                                                                                            precursor
                                                                                      alpha subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 268;
Pred. No. 1
                                                                       Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E3AA833346FAC320 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                            (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .6e-16;
es 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ã
                                                                                                                                                                                                                                       À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiales
                                                                                          Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               by a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
```

6

```
RESULT 7

ITAD_R
AC P50931
DT 01-0CT
DT 01-0CT
DT 01-0CT
DT 01-0CT
DT RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC RICKET
OC OC RICKET
OC OC RICKET
OC OC RICKET
OC OC SEC
OC OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SEC
OC SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P50931;
01-0CT-1996 (
01-0CT-1996 (
01-0CT-1996
                                                                                                       EMBL; U11020; AAB07706.1;
                                                                                                                                                                                                                                                                                                Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C.; submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=33992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia rhipicephali.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7KD_RICRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the Furnment Mininformatics that There are no roots
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pretzman C.I., Stothard D.R., Ralph D., Clark J.B., Fuerst P.A.; Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                              anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                          membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGLIGSKIGOSMDQQDK----IKLNOSLEKVKAGQVTRWRNDDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIMVIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U17008; AAA82040.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 34, Created)
(Rel. 34, Last sequence up
(Rel. 34, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
20
154
154 AA;
                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                        Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
 PROKAR_LIPOPROTEIN; 1.
ipoprotein; Antigen; Signal.
19 BY SIMILARITY.
>154 17 KDA SURFACE ANTIGEN.
20 N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      >154
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROKAR_LIPOPROTEIN; 1.
ipoprotein; Antigen; Signal.
ip BY SIMILARITY.
19 BY SIMILARITY.
17 KDA SURPACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.1%;
36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15897 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 259; DB 1; Lo
Pred. No. 9.6e-16;
30; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-ACYL DIGLYCERIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5D06F45F9DBD5EEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          There are no restrictions ng as its content is in ved. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6;
   밁
                                 Qγ
                                                                      В
                                                                                                       Qy
                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                             CHAIN
                                   118
120
                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QMP
                                                                      64
                                                                                                                                              G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G
```

```
17KD_RICMO
ID 17KD_RICMO
                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                  NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                  Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U11017; AAB07705.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the En
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-1996
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia montana.
Bacteria; Proteobacteria; alpi
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=OHIO 83-441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=33991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P50929;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
SEQUENCE
                                                                                                                                                              8 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
-RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                              KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                          GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                            GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                             SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                 l Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        surface antigen precursor (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 57; Conserv
                                                                                                                                                                                                                                                                                                    PS00013; PROKAR_LIPOPROTEIN; 1.
mbrane; Lipoprotein; Antigen; Signal.
1 19 BY SIMILARITY.
20 >154 17 KDA SURFACE ANTIGEN
20 20 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                               20 >
20
154
154 AA;
                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 34, Created)
(Rel. 34, Last sequence up
(Rel. 34, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                             15881 MW;
                                                                                                                                                                                                                          30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154
15895 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31.1%; Score 259; DB 1; 36.5%; Pred. No. 9.6e-16;
                                                                                                                                                                                                         30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alpha subdivision; Rickettsiales; sae; Rickettsia.
                                                                                                                                                                                                  Score 256; DB 1; Pred. No. 1.7e-15; Wismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30;
                                                                                                                                                                                                                                                                         A09C53B8769E31DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OCF85AD5D96DFEFB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.54
   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          153
                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                       Length 154;
                                                                                                                                                                                                                                                                                                      (PROBABLE).
                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           С.;
                                                                                                                                                                                                Gaps
                                                             119
                                                                                                                                 63
                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6,
```

٠,

```
RESULT 10
17KD_RICCA
1D 17KD_R
AC P29697
DT 01-APR
DT 01-APR
DT 01-OCT
DE 17 APR
OMP.
OS R1Cket
OC R1Cket
OX NCBI_T
RN 11
RP SEQUEN
RX MEDLIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17KD_RICAM
P50927;
                                                                                                             P29697:
01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
01-QCT-1996 (Rel. 34, Last annotation updat
17 kDa surface antigen (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (JAN-1995) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-MO 85-1084;
Stothard D.R., Ral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <del>:</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsia amblyommii.
 SEQUENCE FROM N.A. MEDLINE-92108069;
                                                       Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
                                                                                Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NON_TER
                                          NCBI_TaxID=788;
                                                                                                                                                                               17KD_RICCA
                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                           118
                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                62
                                                                                                                                                                                                                                                                                                                                                           U
                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kDa surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                    SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                               -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                      GAVLGGQVGAGMDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                             GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                           SKIMIIALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                          KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U11013; AAB07704.1; -.
TE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
57; Conserv
                                                                                   canada.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
20
154
                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lipoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              >154
    PubMed=1729713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15879
                                                                                                                                                                                                                                                                                                                                                                                                                             30.6%;
                                                                                                           (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW;
                                                       alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alpha subdivision; Rickettsiales;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                               29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clark J.B., Fuerst P.A., Prete EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POPROTEIN; 1.

i; Antigen; Signal.

BY SIMILARITY.

17 KDA SURFACE ANTIGEN.

N-ACYL DIGLYCERIDE (PROI
                                                                                                                                                                                                                                                                                                                                                                                                            Score 255; Db 1, ...
Pred. No. 2.1e-15;
Pred. No. 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E4FBE4C29D943581 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                               ₿
                                                                                                                                                                                                                                                  154
                                                                      Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pretzman
                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C
                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                               6
```

```
RESULT 11 PCP_YEREN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUL-1993
01-JUL-1993
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PCP_YEREN P31484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                          use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-slb.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                                                                                                                                                                                "A lipoprotein of versinia enterocolitica faci
uptake in Escherichia coli.";
J. Bacteriol. 174:1029-1035(1992).
-!- FUNCTION: FACILITATES FERRIOXAMINE UPTAKE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-ATCC 51872 / WA-C / SEROTYPE 0:8;
MEDLINE-92121089; Pubmed-1732192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             typhus-like rickettsia found in cat fleas."; Proc. Natl. Acad. Sci. U.S.A. 89:43-46(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000437; Prok_lipoprot.
PROSITE; PS00013; PROKAR_LIPOPROTEIN;
Outer membrane; Lipoprotein; Antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M82879; -; NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schmidtmann E.T., Carl M.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Baeumler A.J., Hantke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yersinia enterocolitica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCP OR PCPY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Azad A.F., Sacci J.B.
                                                                                                                                                                                                                                                                                                           - ! - SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yersinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Genetic characterization and transovarial transmission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ᆫ
                                                                                                                                                                                                                                                                 SIMILARITY: TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                anchor (Probable).
                                                                                                                                                                                                                                       H. INFLUENZAE
                                                                                                                                                                                                                                                                                       anchor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NPDTGNSYSVEPVRTYQ 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NPDNGNYGYVTPSKTYK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSQFGKGKGQLIGVGAGALLGAILGNQIGAGMDEQDRRLAELTSQRALETTPSGTSIEWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWR
X60448; CAA42977.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ch 18.8%;
l Similarity 40.3%;
31; Conservative :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rel. 26, Created)
Rel. 26, Last sequ
Rel. 37, Last anno
Rel. 37 Last approved to the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                       PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
8372 MW;
                                                                                                                                                                                                                                                              E.COLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jr.,
                                                                                                                                                                                                                                                                                                                                                                                                                                    ~
                                                                                                                                                                                                                                                                 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Attached to the
                                                                                                                                                                                                                                                                                                              Attached
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pcp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nelson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 156; DB 1;
Pred. No. 3.9e-07;
5; Mismatches 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AD289A48EAB19E0E CRC64;
                                                                                                                                                                                                                                                                 S. TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Σ.
Χ.
                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PARTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dasch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                              outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                           facilitates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outer membrane by a lipid
                                                                                                                                                                                                                                                                 SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                 or
                                                                                                                                                                                                                                                                                                                                                                                                              ferrioxamine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                              Ьy
                                                                                                                                                                                                                                                                                                              വ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٠.
                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ب</u>
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SQ SQ
SEQUENCE FROM N.A.

SPECIES=S.typhi; STRAIN=CT18;
MEDLINE=21534947; PubMed=11677608;
Parkhill J. Dougan G., James K.D., Thomson N.R., Pickard D., Wain J. Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M., Churcher C., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                      Nature 413:852-856(2001).
                                                                                                                                                                              McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courthey L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D. Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                          "Complete genome sequence
[T2 ":
                                                                                                                                                                                                                                              SPECIES=5.typhimurium; STRAIN-LT2 / SGSC1412 / ATCC MEDLINE=21534948; PubMed-11677609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q53549;

Q1-NOV-1997 (Rel. 35, Created)

Q1-NOV-1997 (Rel. 35, Last sequence update)

Q1-MAR-2002 (Rel. 41, Last annotation update)

Quter membrane lipoprotein slyB precursor.
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                  haemolytic
                                                                                                                                                                                                                                                                                                                                                             SPECIES=S.typhimurium;
MEDLINE=96133688; PubM
                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=602,
                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Salmonella typhimurium, Salmonella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLYB_SALTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR;
HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127 VQKQGPTRESVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --NOSLEKVKAGQVTRWRNPDTGNSYSVEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GÄVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGOGVOGAMNRTDGVQLEVRKDDGTTILV
                                                                                                                                                                                                                                                                                                              a regulatory
ytic_and pore-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S23787; S23787.
; P00778; 1P04.
;ITE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AVAIAAVTLTGCANNNTLSGDVFSASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVMGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLIIISVFLVGCAQN-----FSRQE------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   membrane; Lipoprotein;
L 1 17
18 155
18 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                               133688; PubMed=8544813;
Tengel C., Bauer S., B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                atory protein from Salmonella pore-forming protein in Eschet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                            601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155 C
18 N
15362 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                               gamma
                                                                                                                                                                   Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 112.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OUTER MEMBRANE LIPOPROTEIN PCP.
N-ACYL DIGLYCERIDE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                          Bubert A.,
                                                                                                                                                                                                                                                                                                                                                                                                                           subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8AD6BE2132E849FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                     ella typhimurium,
Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .0044;
                                                                                                                                                                                                                                                                                                                                       Benz R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                     Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43;
                                                                                                                                                                                                                                                                                                       coli.";
                                                                                                                                                                                                                                                       700720;
                                                                                                                                                                                                                                                                                                                                      Mollenkopf H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                               induces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155;
                                                                                                                                                                                                                  Layman D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -VGAAT 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                    ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4;
```

```
SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enti...
or send an em.
or send an em.

EMBL; S80790; AAB35871.2;
EMBL; S80790; AAL20367.1; -.
EMBL; AE008762; AAL20367.1; -.
R EMBL; AE027271; CAD01922.1; -.
R StyGene; SG10573; SlyB.
"POSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
"Thrane; Lipoprotein; Signal; Complete proteome.
I, OUTER MEMBRANE LIPOPROTEIN; 1.
OUTER MEMBRANE LIPOPROTEIN; 1.
"ACYL DIGLYCERIDE."
"POCEMBLA:
"THE COMPLET OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE OF THE COMPLETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Best L
SEQUENCE FROM N.A.

STRAIN-KI2 / MG1655;

MEDLINE-97426617; PubMed-9278503;

Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V. Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                           Ludwig A., 7
Goebel W.;
"SlyA, a rechaemolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=96133688; Ludwig A., Tengel
                                                                                                                                                                                                                                                                                                                                                                                                                       SLYB_ECOLI STANDARD; PRT; 155 AA 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) outer membrane lipoprotein slyB precursor. SLYB OR B1641 OR Z2655 OR ECS2350.
                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=562,
                                                                                                                                                                                                                                                                                                                                                        Escherichia coli, and
Escherichia coli 0157:H7
Bacteria; Proteobacteria,
Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is posteween the Swiss Institute of Bioinformat the European Bioinformatics Institute. The modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-slb.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Complete genome sequence of a multiple drug resenterica serovar Typhi CT18.";
Nature 413:848-852(2001).
-!- SUBCELULAR LOCATION: Attached to the outer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MRGCLQGSSL------IIISVFLVGCAQNFSRQEVGAATGAVVGGVA 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GNTIMVVQKQGNTRFSAGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GNSYSVEPVRTYORYNKQER 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GNTIGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LAGCVNNDSLSGDVYTASEAKQVQNVTYGTIVNVRPVQIQGGDDSNVIGAIGGAVLGGFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSNDQQDKIKLNQSLEKVKAGQVTRWRNPDT 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor (Potential)
SIMILARITY: TO E.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCP.
                                                                                                                                                        regulatory protein from Salmonella typhimurium, i ic and pore-forming protein in Escherichia coli."; Genet. 249:474-486(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                      83334;
                                                                                                                                                                                                                                             PubMed=8544813;
C., Bauer S., B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TO E.COLI SLYB, H.INFLUENZAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12.78; 24.38;
                                                                                                                                                                                                                                                                                                                                                                         gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 105.5; DE
Pred. No. 0.018;
                                                                                                                                                                                                                                           Bubert A.,
                                                                                                                                                                                                                                                                                                                                                                     subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ght. It is produced a
Bioinformatics and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no rest
                                                                                                                                                                                                                                         Benz R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                            Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 resistant Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane
                                                                                                                                                                                                                                  Mollenkopf H.-J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND Y.ENTEROCOLITICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the EMBL CLC
10 restrictions on
1 in no
                                                                                                                                                                                               induces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collaboration
L outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      its
```

```
밁
                             á
                                                              Query Match
Best Local S
Matches 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X MEDLINE-97251357; PubMed=9097039;
A Alba H., Baba T., Fujita K., Hayashi K., Inada T., Isono K.,
A Altoh T., Kasai H., Kashimoto K., Kinura S., Kitakawa M.,
A Kitagawa M., Makino K., Miki T., Mizobuchi K., Mori H., Mori
A Motomura K., Nakade S., Nakamura Y., Nashimoto H., Nishio Y.,
A Motomura K., Nakade S., Nakamura Y., Nashimoto H., Nishio Y.,
A Oshima T., Saito N., Sampei G., Seki Y., Sivasundaram S.,
A Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C.,
A Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C.,
A Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C.,
A Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C.,
A Tagami H., Takeda J., Takemoto K., Takeuchi Y., Wada C.,
A Sampoto Y., Horiuchi T.,
A S70.kb DNA sequence of the Escherichia coli K-12 genome
Corresponding to the 28.0-40.1 min region on the linkage map.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-0157:H7 / RIMD 0509952;

MEDLINE-21156231; PubMed-11258796;

Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoy.

Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe '
Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunax

Kuhara S., Shiba T., Hattori M., Shinagawa H.;

"Complete genome sequence of enterohemorrhagic Escherichia coli
0157:H7 and genomic comparison with a laboratory strain K-12.";

DNA Res. 8:11-22(2001).
                                                                                                                                 CONFLICT
                                                                                                                                                                                                                 ECOGENE; EG13409; slyB.
PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein: ci---'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner F.R.;

"Genome sequence of enterohaemorrhagic Escherichia coli 0157:H7."
                                                                                                                                                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature
[5]
                                                                                                                                                                   TIPID
                                                                                                                                                                                                                                                                                                                                                                                        modified
                                                                                                                                                                                                                                                                                                                                                                                                                                         between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-0157:H7 / EDL933 / ATCC 700 MEDLINE-21074935; PubMed-11206551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Science [3]
                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A
 10
                                  12
                                                                                                                                                                                                                                                                                                                                                     send
                                                                                                                                                                                                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     anchor (Potential).
SIMILARITY: TO S.TYPHIMURIUM SLYB, H.INFLUENZAE
Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complete
 MVGLSLVGCVNNDTLSGDVYTASEAKQVQNVSYGTIVNVRPVQIQGGDDSNVIGAIGGAV
                                 IISVFLVGCAQN-----FSRQE----
                                                                                                                                                                                                                                                                  AE000259; AAC74713.1; -. D90807; BAA15402.1; -. AE005387; AAG56630.1; -. AP002558; BAB35773.1; -.
                                                                                                                                                                                                                                                                                                                                                    non-profit institutions as long as its content is in no way d and this statement is not removed. Usage by and for commercial is requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                              Similarity 22.8
33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plete genome sequence
277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shao Y.;
                                                                                                                                    155
                                                                                                                                    Α,
                                                                                                                                                                                                               Lipoprotein;
                                                                                                                           17
155
18
98
15602
                                                                                 12.6%;
                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Attached to
                                                                                                                               n; Signal; Complete proteome.
POTENTIAL.
OUTER MEMBRANE LIPOPROTEIN S
N-ACYL DIGLYCERIDE.
A -> T (IN REF. 2).
4W; 543EB8A4069A5FA3 CRC64;
                                                                  21;
                                                                                 Score 104.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               700927;
                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                 0.021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coli K-12 genome
on the linkage ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outer
                                                                                                   DB
                                                                  42;
                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         membrane
                                                                                               Length
                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coli 0157:H7.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCP
                                                                                                                                                                                   SLYB
                                 -VGAATGAV
                                                                                                   155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yasunaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yokoyama
Tobe T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 map.";
                                                                  49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7.
                                                                  4;
```

```
RESULT 14
PCP_HAEIN
 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1995 (Rel. 10, Created)
16-OCT-2001 (Rel. 32, Last sequence update)
Outer membrane lipoprotein PCP precursor (15 kDa PCP OR LPP OR HI1579.
Haemophilus infi
                           Outer membrane;
SIGNAL 1
CHAIN 19
LIPID 19
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                        This SWI
                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-RD / KW20 / ATCC 51907;

MEDLINE=95350630; PubMed=7542800;

Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness I Fleischmann R.D., Adams M.D., Tomb J.-F., Dougherty B.A., Merrick i Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Gocayne J.D., McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

MEDILINE-88115138; pubMed=2828309;

MEDILINE-88115138; pubMed=2828309;

Deich R.A., Metcalf B.J., Finn C.W., Farley J.E., Green B.A.;

"Cloning of genes encoding a 15,000-dalton peptidoglycan-associated outer membrane lipoprotein and an antigenically related 15,000-dalto protein from Haemophilus influenzae.";

J. Bacteriol. 170:489-498(1988).
                                                                                                                                                                use by non-profit institutions as long as its cont modified and this statement is not removed. Usage by entities requires a license agreement (See http://www.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                         Science
                                                                                                                                                                                                                                                                                                                                                     "Whole-genome random sequencing influenzae Rd.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria;
Haemophilus.
                                                                                                              PIR; B28543;
                                                                                                                             EMBL;
                                                                                                                                                                                                                         the European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                   Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                 SIMILARITY: TO E.COLI AND Y.ENTEROCOLITICA PCP.
                                                                                                                                                                                                                                                                                                             anchor
                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through a collabeen the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---DDGNT IMVVQKQGNTRFSPGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGGFLGNTVGGGTGRSLATAAGAVAGGVAGQGVQSAMNKTQGVEL--EIRK---
                                                                                                                           M18877; AAA24938.1;
U32832; AAC23228.1;
                                                                                                                                                                                                                                                                                                                                         269:496-512(1995).
                                                                                  PS00013; PROKAR_LIPOPROTEIN;
                                                                                                               B28543.
                                                                     Lipoprotein;
             19
143
 15425
                                                                                                                             . . .
                                                                                                                                                                                                                                                                                                                           Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gamma
 Œ;
             N-ACYL DIGLYCERIDE.
CSLVAEFVF -> VAGRRVRI (IN
                                         OUTER MEMBRANE LIPOPROTEIN
                                                                     Signal;
                                                                                                                                                                                                                                                                                                S. TYPHIMURIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subdivision;
                                                                                                                                                                                                                                                                                                                                                                    assembly of Haemophilus
                                                                      Complete
                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                            outer membrane
                                                                                                                                                                                                                                                                                                SLYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pasteurellaceae
                                                                     proteome
 CRC64;
                                                                                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lipoprotein) (PAL
                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                   .isb-sib.
              REF.
                                          PCP.
                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                            γģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 000-dalton
              __
                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                     collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                            R.C.,
                                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                            lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    មគ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
                                                                                                                                                                                                              way
```

Matches

Local

Similarity

12.1%;
39.6%;

Score 101; DB 1; Pred. No. 0.043; 9; Mismatches 2

DB_1; Length 155; 23;

Indels

0;

Gaps

0,

Conservative

9;

```
RESULT 15
YCFJ_ECOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
      EMBL;
EMBL;
EMBL;
                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                          MEDLINE=95075659; PubMed=7984428;
Borodovsky M., Rudd K.E., Koonin E.V.;
"Intrinsic and extrinsic approaches for detecting genes bacterial genome.";
                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-7061202; PubMed-8905232;
Oshina T., Aiba H., Baba T., Fujita K., Hayashi K., Honjo A.,
Ikemoto K., Inada T., Itoh T., Kajihara M., Kanai K., Kashimoto K.,
Kimura S., Kitagawa M., Makino K., Masuda S., Miki T., Mizobuchi K.,
MOTI H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Saito N.,
Sampei G., Seki Y., Tayami H., Takemoto K., Wada C., Yamamoto Y.,
"A 718-kb DNA sequence of the Escherichia coli K-12 genome
DNA Res. 3:137-155(1996).
                                                                                                                                                                                                    Nucleic Acids Res.
                                                                                                                                                                                                                                                                                          MEDLINE-81236546; PubMed-6265208; Young J.G., Rogers B.L., Campbell H.D., Jaworowski A., Shaw D.C.; "Nucleotide sequence coding for the respiratory NADH dehydrogenase of Escherichia coli. UUG initiation codon."; Escherichia coli. UUG initiation codon.";
                                                                                                                                                                      Nucleic Acids Res. 22:4756-4767(1994).
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1-63 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-K12
                                                                                                                                                                                                                                                                               DENTIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-KI2 / MG1655;
MEDLINE=9/426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
MBAU B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _ECOLI
YCFU_ECOLI STANDARD; PRT; 179 AA.
P37796; P75951; 30, Created)
O1-OCT-1994 (Rel. 30, Created)
O1-NOV-1997 (Rel. 35, Last sequence update)
O1-MAR-2002 (Rel. 41, Last annotation update)
Hypothetical protein ycfJ.
YCFJ OR B1110.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli
      D90746;
V00306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE000211; AAC74194.1; -.
                     BAA35925.1;
NOT_ANNOTATED_CDS
                                                                                                                                                                                                                       ä
```

```
Search completed: October 27, Job time: 6.11744 secs
                                                               멍
                                                                                     δÃ
                                                                                                                  дb
                                                                                                                                          δÃ
                                                                                                                                                                      Ъ
                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                 SQ FT
                                                                                                                                                                                                                                       Query Match
Best Local ;
                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                 EcoGene; EG12444; ycfJ.
Hypothetical protein; Transmembrane; Complete proteome
TRANSMEM 5 25 POTENTIAL.
SEQUENCE 179 AA; 18920 MW; BA5EBODB56D45609 CRC64;
                                                    163 TQIPL-DSNGQLILNNK 178
                                                                               145 TACPOPDGRWQVISTEK 161
                                                                                                                 121
                                                                                                                                                                    30 GAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 89
                                                                                                                                           90
                                                                                                                                                                                                                                     Local
                                                                                                                                                   GSVLGAVAGGVIGHQFGGGRGKDVATVVGALGGGYAGNQIQGSLQESD-------
                                                                                                 ------TYTTTQQRCKTYYDKSEKMLGYDVTYK----IGDQQGKIRMDRDPG 162
                                                                                                                       AGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY-----G 144
                                                                                                                                                                                                                         36;
                                                                                                                                                                                                                  Similarity 26.3
36; Conservative
                                                                                                                                                                                                                              12.0%;
26.3%;
                                                                                                                                                                                                                 17;
                                                                                                                                                                                                           Score 100; DB 1; Length 179;
Pred. No. 0.061;
7; Mismatches 48; Indels
                                                                                                                                                                                                                                                              BA5EB0DB56D45609 CRC64;
                                                                                                                                                                                                            36;
                                                                                                                                                                                                        Gaps
                                                                                                                                                      120
```

4.

2002, 11:10:51

GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compus

Compugen Ltd

```
Result
                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
101
100.5
100
100
100
99.5
                                                                                                                107.5
107.5
                                                                                                                                                                        276.5
276
127.5
120.5
                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                         seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                  length:
                                                                                                                                                                                                                                                                                                                                                                                                          length:
                                                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                  283138 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-677-374-4
832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          October 27, 2002, 11:05:56; Search time 10.2884 Seconds (without alignments) 1503.668 Million cell updates.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 161
PIR_71:*
                                                                                                                                                                                                                                                                                                                         pir1:*
pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                  Length DB
                                                                                                                                                                                                                                                                                                                                                                                                           2000000000
96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapext 0.5
                        S58234
AG0443
AD3350
I64130
F87413
C64855
                                                                                C64921
F90922
                                                                                                                                                       в83514
                                                                                                         AF0289
D97478
                                                                                                                                                                                                                                 D33971
                                                                                                                                                                                                                                                  Ĥ
                                                                                                                                          G87629
                                                                                                                                                                         AI3418
                                                                                                                                                                                 D83169
                                                                                                 AI0693
                                                                                                                         AD2696
                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                283138
                                                      conserved hypothet lipA protein (impo probable lipoprote lipA protein [impo outer membrane lip probable outer mem probable outer mem lipA protein - Rhi outer membrane lip
                                                                                                                                       conserved hypothet probable secreted hypothetical prote
                      hypothetical prote
ycfJ protein - Esc
                                       outer membrane pro
PAL cross-reacting
                                                                                                                                                                17K surface antige outer membrane lip
       hypothetical
hypothetical
                                                                                                                                                                              conserved hypothet
                                                                                                                                                                                         17K antigen precur
                                                                                                                                                                                                 Rickettsial
                                                                                                                                                                                                                Rickettsial
                                                                                                                                                                                                                          Rickettsial
                                                                                                                                                                                                                                 rickettsial
                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                       17K surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell updates/sec
                                                                                                                                                                                                                          common
                                                                                                                                                                                                       antige
                                                                                                                                                                                                                common
```

```
prote
  prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
D33971
                           RESULT
B33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: omp; RP833
C;Superfamily: rickettsial of
C;Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsmarl nature 396, 133-140, 1998
A;Title: The genome sequence of Rickettsia prowazekii and the origin of mitochondria A;Reference number: A71630; MUID:99039499
A;Accession: B71645
                                                                                                                                      В
                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-159 <AN2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:M28482; NID:g152461
A;Note: the sequence in GenBank entry RIRANT17KC,
R;Andersson, S.G.E.; Zommrodipour, A.; Andersson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R:Anderson, B.E.: Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Tille: Comparative sequence analysis of a genus-common rickettsial antigen gene.
A;Reference number: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Rickettsia prowazekii
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000
C;Date: 15-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000
C;Date: 16-Mar-1990 #text_change 03-Nov-2000
C;Date: 16-Mar-1990 #text_change 03-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rickettsial common antigen precursor - Rickettsia prowazekii N; Alternate names: 17kD surface antigen; outer membrane protein (omp); RP833
Rickettsial common antigen precursor - Rickettsia conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source: strain Madrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: D33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                      120
                                                                                                                                                              64 GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                            8 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                5 SKIMITALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                            GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                      -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                   61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 288; DB 2;
Pred. No. 1.7e-18;
2; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         release 109.0, (PID:g152462) omits J.O.; Sicheritz-Ponten, T.; Alsmar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                      6;
```

```
17K surface antigen precursor [imported] - Rickettsia conorii (strain Malish C;Species: Rickettsia conorii (c;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C;Accession: G97860 R;Ogata, H; Audic, S; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; San
                                                                                                     RESULT 4
G97860
Science 293,
                                                                                                                                                                        DЬ
                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                        C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsial common antigen precursor - Rickettsia rickettsii C. Species: Rickettsia rickettsii G. Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_char.char.square.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   K;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a
A;Reference number: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Anderson, B.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Rickettsia conorii
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 20-Aug-1999
C;Accession: B33971
C;Accession: B33971
J; Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antige A;Reference number: A33971; MUID:89359171
A;Accession: B33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                              Cross-references: GB:M28480; NID:g152457; Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A:Cross-references: GB:M28479; NID:g152463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;Superfamily: rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                    120
                                                                                                                                                                                  118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                                                                                 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                     8 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSHAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                     -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                         SKIMITALATSMIQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                             GAVLGGOIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                           GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 SKIMITALATSMLOACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTVQRYN 117
     Audic, S.;
2093-2098,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
 Renesto-Audiffren,
2001
                                                                                                                                                                                                                                                                                                                                            34.3%; Score 285; DB 2; J
37.9%; Pred. No. 3.1e-18;
tive 31; Mismatches 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34.3%; Sco
37.9%; Pro
ative 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 285; DB 2;
Pred. No. 3.1e-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
     P.; Fournier,
                                                                                                                                                                                                                                                                                                                                                                                                                   PIDN:AAA26376.1; PID:g152458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIDN:AAA26379.1; PID:g152464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53;
                                                                                                                                                                                                                                                                                                                                                                        Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 159;
                                                                                                                                                                                                                                                                                                                                            Indels
      P.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rickettsial antigen
     Barbe,
                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
     ۲.;
                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
Samson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6;
 D.,
R
                                                                                                                                                                                       da
                                                                                                                                                                                                                   γQ
                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                            Qy
```

```
RESULT 6
A25972
17K antigen precursor - Rickettsia rickettsii
C;Species: Rickettsia rickettsii
C;Date: 21-May-1988 #sequence_revision 21-May-1988 #text_change:
C:Accession: A25972
Pennery, R.L.; Carlone, G.M.; Tzianabos, T.; P
R;Anderson, B.E.; Regnery, R.L.; Carlone, G.M.; Tzianabos, T.; McDage, J.E.; ru, 4.1. J. Bacteriol. 169, 2385-2390, 1987
A;Title: Sequence analysis of the 17-kilodalton-antigen gene from Rickettsia ricketts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Bacteriol. 77, Tzianabos, T. A.Title: Comparative sequence analysis of a genus-common A; Reference number: A33971; MUID: 89359171 A; Atcession: C33971 A3971; MUID: 89359171 A; Statue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsial common antigen precursor -C. Species: Rickettsia typhi C. Date: 16-Mar-1990 #sequence_revision C. Accession: C33971 R. Anderson, B.E.; Tzianabos, T. J. Bacteriol. 171, 5199-5201, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:M28481; NID:g152459; PIDN:AAA26377.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
C33971
                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 39.6
55; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A:Gene: omp
C:Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:AE006914; PIDN:AAL03825.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-159 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A:Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowazekii. A:Reference number: A97700; MUID:21442074; PMID:11557893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                       141 QTTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                08
                                                                                                                                                                                                                                                                                                                                              27
                                                                                                                                                                                                                                                                                                                                                       25 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                   TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY--
                                                                                                                                                                                                                                                                                        KLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYORYNKQERROOYCREFOOKAMIAGOK 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                        QEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                           NKQCTCTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQIGASLDEQDRKLLEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGLIGSKIGOSMDOODK----IKLNQSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                33.2%; Sco
39.6%; Pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                              Score 276.5; DB ;
Pred. No. 1.8e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 285;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-Mar-1990 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
.1e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                             -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PID:915620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsial antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g152460
                                                                           20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                         4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
```

```
A; Experimental:
C; Genetics:
A; Gene: PA3819
                                                                                                                                                       RESULT 8
AT3418
AT3418
17K surface antigen precursor [imported] - Brucella melitensis (strain 16M)
C;Species: Brucella melitensis
C;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 01-Feb-2002
C;Accession: AT3418
R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.;
Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, E
proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
                                                                         A:Title: The genome sequence of the facultative intracellular pathogen Brucella meliten A:Reference number: AD3252; PMID:11756688 A:Recession: AI3418 A:Accession: AI3418 A:Status; preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        conserved hypothetical protein PA3819 [imported] - Pseudomonas aerug C;Specles: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-D C;Accession: D83169 R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
A; Molecule type: DNA
A; Residues: 1-131 < MUR>
A; Cross-references: GB: AE008917; PIDN: AAL52516.1;
A; Experimental source: strain 16M
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:AE004799; GB:AE004091; NID:g9949981; PIDN:AAG07206.1; GSPDB:GN00A;Experimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-182 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Complete genome sec
A: Reference number: A82950;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:M16486; NID:g152467; PIDN:AAA26381.1; PID:g152468 C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Accession: D83169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: D
A; Residues: 1-159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                             -KLNQSLEKV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QIAGTAIGAVVGGLLGNQIGGGTGKKIATVAGAVGGGYAGNKVQEGMQERDTYTTTETRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -RNSTGOYCREYTOTVVIGGKOOKAYGDACROPDEOWOVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 117
                                                                                                                                                                                                                                                                                                                                                                                     STVHDSSEKVVGYDVKYMLDGKAGQIRMERDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence of Pseudomonas 50; MUID:20437337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33.2%;
37.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                          -----KAGQVTRWRNP 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 127.5; DB :
Pred. No. 0.00037;
3; Mismatches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 276; DB 2
Pred. No. 2e-17;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB_2; Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aeruginosa PA01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28;
                PID:g17983328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change 31-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                  GSPDB:GN00190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P.; Hickey,
A.; Larbig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               opportunistic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                              D.; Letes
                                                                                                                                                                                                   Ivanova,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M.J.; B:
K.; Lim,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAO1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  patho
```

N: Lory, S.; Olson, M.V.
N: Rure 406, 959-964, 2000
A; Title: Complete genome sequ
A; Reference number: A82950; M
A; Accession: B83514

sequence of Pseudomonas 50; MUID:20437337

aeruginosa

PA01,

opportunistic

A; Molecule type: DNA
A; Residues: 1-154 <STO>
A; Cross-references: GB;
A; Experimental source: 9

GB:AE004537; GB:AE004091; NID:g9946960;

PIDN: AAG04442.1;

GSPDB:

strain

PAOI

A; Status: preliminary

```
outer membrane lipoprotein precursor c; Species: Yersinia enterocolitica C; Date: 22-Nov-1993 #sequence_revision C; Accession: S23787
C;ACCESSION: B83514
C;ACCESSION: B83514
R;Stover, C.K.; Pham, X.O.; Erwin, A.L.; Mizoguchi, S.D.; adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, i
                                                             conserved hypothetical protein PA1053 [imported] - Pseudomonas aeruginosa (
C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
                                                                                                                                                                                       В
                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                          рЬ
                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X60448; NID:g48577; PIDN:CAA42977.1; C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-155 <BAE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J. Bacteriol. 174, 1029-1035, 1992
J. Bacteriol. 174, 1029-1035, 1992
A;Title: A lipoprotein of Yersinia
A;Reference number: S23786; MUID:93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                     B83514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S23787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: BMEI1335
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       152 GRW
                                                                                                                                                                                         127
                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92
                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                         34 GAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72 KSVLWSGAGS-NAGDVTAAQPYQ-----VGSQNCRQYSHSFTIGGDQQTVRGTACRNPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14 GKGSGFPS--LGGSSQKPETNLLASLGNGLFGNSASQLSAADRRKALEAEYRALEYSPAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46 GKGSGRVSMAIGG------AVLG-GLIGSKIGQ--SMDQQDKIKLN-QSLEKVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                        -- NQSLEKVKAGQVTRWRNPDTGNSYSVEP 109
                                                                                                                                                                                                                                                        GAVLGGFLGNTVGGGTGRSLATAAGAVAGGMAGQGVQGAMNRTDGVQLEVRKDDGTTILV 126
                                                                                                                                                                                                                                                                                                                             AVAIAAVTLTGCANNNTLSGDVFSASQAKQVQTVTYGTLLSVRPVTIQGGDDNNVMGAIG
                                                                                                                                                                                                                                                                                                                                                               SLIIISVFLVGCAQN-----FSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACPQPD 151
                                                                                                                                                                                       VQKQGPTRFSVGQ--RVMLASSGSTVTVSP 154
                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
37; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity
39; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.5%;
31.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ersinia enterocolítica
MUID:92121089
                                                                                                                                                                                                                                                                                                                                                                                                 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                Score 112.5; DB Pred. No. 0.0068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 120.5; DB Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-Nov-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yersinia enterocolitica
                                                                                                                                                                                                                                                                                                                                                                                                 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44;
                                                                                                                                                                                                                                                                                                                                                               -----VGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           facilitates
                                                                                                 Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2:
                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
          .; Warrener,
, K.R.; Kas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID: g48579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ferrioxamine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                             66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                               33
              Hickey,
Larbig,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         uptake
                                                                                                                                                                                                                                                                                                                                                                                                 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
```

```
RESULT 12

G87629

hypothetical protein CC3073 [imported] - Caulobacter crescentus
C:Species: Caulobacter crescentus
C:Species: Caulobacter crescentus
C:Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001
C:Accession: G87629
C:Accession: G87629
R:Nlerman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J.
B: Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M.
A:Reference number: A87249; MUID:21173698; PMID:11259647
                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: STY1252
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:AL513382; PIDN:CAD08336.1; PID:g16502381; GSPDB:GN00176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-179 < PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S: Moule, S.; O'Gaora, P.
Nature 413, 848-852, 2001
A; Authors: Parry, C.; Quail, M.; R.
A; Title: Complete genome sequence
A; Reference number: AB0502; PMID:1
A; Accession: AE0644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     probable secreted protein STY1252 [imported] - Salmonella enterica subsp. enterica serov C:Species: Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C:Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 14-Dec-2001 C;Accession: AE0644 R;Parkhill, J; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Churcher, th, T.; Connerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd, L.; White, N.; Farrar, S. Monle S. O'Garra B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Genetics:
A;Gene: PA1053
C;Superfamily: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                   165
                                                                                                                                                                                                                                                                                                          147 CPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                             73
                                                                                                                                                                                                                                                                                                                                                                                                                                   30 GAATGAVVGGVAGQLEGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVK 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Loca L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 STRAYVQQVDQGQIFR 136
                                                                                                                                                                                                                                                                         IPL-DGNGQLVLNNK 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82 -- NQSLEKVKAGQVTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                             AGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQ---QKAMIAGQKQEIYGTA 146
                                                                                                                                                                                                                                                                                                                                                                                                        GSVLGAVAGGVIGHQFGGGRGKDVATVVGALGGGYAGNQIQGSMQESD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IGSIAGAGVÄGVAGSAVGGGKGSYVAAIIGAVAGGLLGAATEEGLTRTQGVEITVREDDG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MRKSALIVASETAMALALGGCQSSLTGDTYSREEARTVQTVRMGTIQALRPVKIEGTKTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LQGSSLIIIS-----VFLVGC-----AQNFSRQE------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C:; Quail, M.; Rutherford, K.; genome sequence of a multiple r: AB0502; PMID:11677608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                            -TYTTTQQRCKTVYDKSEKMLGYDVTYKIGDQQGKIRMDKDP--GTQ 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13.1%; Score 109; DB 2; 27.4%; Pred. No. 0.016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 111.5; DB
Pred. No. 0.0083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K.; Simmonds, M.;
ple drug resistant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Skelton, J.; Stevens, Salmonella enterica se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        *
```

```
R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, erage, G.; Gillet, W.; Grant, C.; Guenthner, I; Karp, P.; Romero, P.; Zhang, S.
                                                                                          lipA protein [imported] - Agrobacterium tumefaciens C:Species: Agrobacterium tumefaciens C:Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #C:Accession: AD2696
                                                                                                                                                                                                                                           RESULT 14
AD2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:AED003872; GB:AED003849; NID:g9104975; PIDN:AAF82991.1; GSPDB:GN
A;Experimental source: strain 9a5c
R;Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.
as-Neto, E.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer
A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Fr
Chado, M.A.; Madeira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; La
A;Authors: Martins, E.M.F.; Matsukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.
Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawa
M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silva, A.R.; Silva Jr., W.A.; da Silva Jr., W.A.; da Silva Jr., W.A.; da Silva Jr., W.A.; da Silva Jr., W.A.; da Silv
                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 47.5
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 406, 151-157, 2000
A,Title: The genome sequence of the plant pathogen Xylella fastidiosa. A; Note: for a complete list of authors see reference number A59328 bei A; Accession: B82837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; MOLECULE type: DNA
A; Residues: 1-257 <SIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; anonymous, The Xylella fastidiosa Consortium of the Nature 406, 151-157, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 conserved hypothetical protein xF0178 [imported] - Xylella fastidiosa (strain C;Species: Xylella fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: DNA
A;Residues: 1-232 <STO>
A;Cross-references: GB:AE005673; NID:gl3424723; PIDN:AAK25035.1; GSPDB:GN00148
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Gene: CC3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: G87629
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                               105
                                                                                                                                                                                                                                                                                                                                                                                   30 GAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKI 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141 AAQEVGGIYKSGGFRYAQTVQAAPLVKIEKKMVTR 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XF0178
                                                                                                                                                                                                                                                                                                                            GTAIGALIGGLVGNQFGHGNGRKALTAAGAVAGGFIGNEV 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74 DQQDKIKLNQS-----LEKVKAGQVTR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81 VVGCKASGKKOEVGAVVGALLGAAAGSNLAKNDOGTGTAIGAVVGAGAGSLIGCKMQKSD 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 LYGCAQNESRQEYGAATGAVYGGYAGQLEGK---GSGRYSMAIGGAYLGGLIGSKIGQSM 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13.1%;
47.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.1%;
33.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 109; DB 2
Pred. No. 0.024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 109; DB 2,
Pred. No. 0.021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                11-Jan-2002 #text_change 11-Jan-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   see reference number A59328 below
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                       (strain C58,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Organization for Nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 232,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                 Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9a5c)
```

, D.; Chen, L.; Wood, G.E.; Chen, D.; Kutyavin, T.; Levy, R.; Li, N

Υ.,

, Woo

```
probable lipoprotein slyB [imported] - Yersinia pestis (strain CO92)
C;Species: Yersinia pestis
C;Species: Yersinia pestis
C;Oate: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001
C;Accession: AF0289
R;Parkhill, J; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; ll, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrell, Nature 413, 523-527, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ster, E.W.
A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58.
A;Reference number: AB2577; PMID:11743193
A;Accession: AD2696
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: slyB
C;Superfamily: PAL cross-reacting lipoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
Search completed: October 27, Job time: 11.2884 secs
                                                                                             밁
                                                                                                                              δÃ
                                                                                                                                                                                      망
                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                  용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-155 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Genome sequence of Yersinia pestis, the causative agent of plague. A;Reference number: AB0001; MUID:21470413; PMID:11586360 A;Accession: AF0289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:AE008688; PIDN:AAL41986.1; PID:g17739358; GSPDB:GN00186 A;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-142 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:AL590842; PIDN:CAC91178.1; PID:g15980369; GSPDB:GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: lipA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           108 QNCRQYSHTLTVDGRDTRVRGAACRNDDGSW 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 QYCREFQQKAMIAGQKQEIYGTACPQPDGRW 154
                                                                                             127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                       82 -- NQSLEKVKAGQVTRWRNPDTGNSYSVEP 109
                                                                                                                                                                                                                                     34 GAVVGGVAGOLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL--
                                                                                                                                                                                                                                                                                                                                                                             Match 12.9%; Score 107.5; DB Local Similarity 24.0%; Pred. No. 0.019; es 36; Conservative 19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                  7 AVAIAVVTLTGCANNNTLSGDVFTASQAKQVQTVSYGTLISVRPVTIQGGDDNNVVGAIG 66
                                                                                                                                                                                                                                                                                                                                   9 SLIIISVFLVGCAQN-----FSRQE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IGQSMDQQDKIKL----NQSLEKVKAGQVTRWRNPDT-GNSYSVEPVRTYQRYNKQERRQ 123
                                                                                         VQKQGPTQFSVGQRVMLAN--SGSTITVSP 154
                                                                                                                                                                                      GAVLGGFLGNAVGGGTGRSLATAAGAVAGGIAGQGVQGALNRTDGVQLEIRKDDGQTILV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGVELDRGDQTKALEAEYKALETAPVGTPVIWTGDDVKGQVVANAP---YQVGN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.9%; Score 107.5; DB 2; 27.2%; Pred. No. 0.017; tive 20; Mismatches 61;
                      2002, 11:11:36
                                                                                                                                                                                                                                                                                                                                   -----VGAAT 33
                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                  44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                          Length 155;
                                                                                                                                                                                                                                     ----- 81
                                                                                                                                                                                                                                                                                                                                                                             51; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
```

THIS PAGE BLANK (USPTO)

sequence sequence sequence sequence sequence sequence sequence sequence sequence sequence sequence sequence sequence sequence

e 7, Appli e 15, Appli e 17, Appli e 17, Appli e 16, Appli e 26, Appli e 26, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 3, Appli e 4, Appli e 4, Appli e 4, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5, Appli e 5,

Sequence

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                               No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-677-374-4
832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    October 27, 2002, 11:08:02; Search time 8.34197 Seconds (without alignments) 471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/laa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/laa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/laa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/laa/Dackfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MRGCLQGSSLIIISVFLVGC......IYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              231628 seqs, 24425594 residues
    99.44444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapext 0
 US-08-556-978B-19
US-08-425-069-1
US-08-425-069-2
US-08-317-844B-2
US-09-034-177-3
US-09-553-498-8
US-09-067-351-2
US-09-360-490-2
US-08-374-077C-2
US-08-374-077C-2
US-08-374-077C-2
US-08-413-118-6
US-08-413-118-6
US-08-413-118-6
US-09-0567-351-1
US-09-0567-351-1
US-09-0567-351-1
US-09-0567-351-2
US-09-128-32-2
US-09-128-33-2
US-09-128-33-2
US-09-128-33-344-2
US-09-248-335-40
US-09-248-335-40
US-09-248-335-40
US-09-248-335-40
US-09-248-335-40
US-09-050-041-16
US-08-375-709-7
                                                                                                                                                                                                                                                                                                                                                                                              H
                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
Sequence 19, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 8, Appli
Sequence 8, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 25, Appli
Sequence 25, Appli
Sequence 25, Appli
Sequence 26, Appli
Sequence 26, Appli
Sequence 26, Appli
Sequence 26, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
Sequence 27, Appli
                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 651 amino acids
; TYPE: amino acid
STRANDEDNESS: unknown
; TOPOLOGY: unknown
; MOLECULE TYPE: protein
US-08-556-978B-19
               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
US-08-556-978B-19
                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/077,60
FILING DATE: JUNE 15, 1993
ATTORNEY/AGENT INFORMATION:
NAME: FLOYD, LINDA AXAMETHY
REGISTRATION NUMBER: 33,692
REFERENCE/DOCKET NUMBER: CR-9
TELECOMMUNICATION INFORMATION:
TELEFAX: 302-892-8112
TELEFAX: 302-773-0164
INFORMATION FOR SEQ ID NO: 19:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence 19, Application US/08556978B
Patent No. 6268169
                                                         Query Match
Best Local
                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MICROSOFT WINDOWS SOFTWARE: MICROSOFT WORD FOR WINDOWS
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 107
CORRESPONDENCE ADDRESS:
ADDRESSEE: E. I. DU PONT DE NEMOURS AND COMPANY
STREET: 1007 MARKET STREET
                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: DISKETTE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1007 MAI
 27 QEVGAATGAVVG----GVAGQ-
                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DELAWARE
                                                                                                                                                                     651 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UNITED STATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FAHNESTOCK, STEPHEN
                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           970
970
2703
2748
731
731
792
793
606
606
607
547
547
547
547
1021
1021
1021
1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPIDER
                                                        9.4°;
35.3°;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOVEL
                                                                                                                                                                                                                                                                                                                                                                               US/08/556,978B
                                                                                                                                                                                                                                                                                                                        08/077,600
                                                                                                                                                                                                                                                    33,692
ER: CR-9389-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.50 INCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-752-929-7

US-09-090-793-5

US-09-032-523-1

US-08-913-364-1

US-08-917-364-1

US-08-917-349-3

US-09-177-349-3

US-09-177-349-3

US-08-452-567-3

US-08-452-607-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-452-107-3

US-08-10-760-12

US-08-440-519-12

US-08-13-832A-2

US-08-556-978B-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RECOMBINANTLY
R SILK ANALOGS
                                         Score 78.5; D
Pred. No. 1.7;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'TJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRODUCED
                                                                     DB 4;
                                           17;
  LFGKGSGRVSMAIGGAVLGG
                                                                     Length 651;
                                           Indels 23;
```

Result No.

Score

Pred. No. score grea

is

2222222111111111 98

Gaps

2:

Minimum DB Maximum DB

Scoring table: Sequence: Perfect score:

9

Database

US-09-247-806-1

GENERAL INFORMATION:

В ρy g

491

551 LGGQGAGQ 558

64 LIGSKIGQ

ν,

```
APPLICANT: CHILLIPE, Michel
APPLICANT: GARSON, Jean-Claude
APPLICANT: GARSON, Jean-Claude
APPLICANT: ARRAUDEAU, Jean-Parel
TITLE OF INVENTION: COSMETIC OR DERMATOLOGICAL COMPOSITION CONTACTING AT
TITLE OF INVENTION: LEAST ONE NATURAL OR RECOMBINANT SPIDER SILK OR AN
FILE REFERENCE: 6388-0365-0
CURRENT APPLICATION NUMBER: US/09/247,806
CURRENT APPLICATION NUMBER: FR 98/01614
EARLIER APPLICATION NUMBER: FR 98/01614
SENTIANG DATE: 1998-02-11
SEATLIER APPLICATION NUMBER: SP 98/01614
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 1
LENGTH: 651
TYPE: DRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: PRT
; ORGANISM: Nephila clavipes
US-09-247-806-1
                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, 1
CURRENT APPLICATION NUMBER: US/08/425,069
FILING DATE: 19-APR-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08425069 Patent No. 5728810
                                                                                                                                                                                                                                                                                                                                               APPLICANT: Lewis, Randolph V.
APPLICANT: Xu, Ming
APPLICANT: Hinman, Michael B.
TITLE OF INVENTION: ISOLATED DN
TITLE OF INVENTION: PROTEIN, A
NUMBER OF SEQUENCES: 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/09247806
Patent No. 6280747
                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch
STREET: 301 No. 5728810th Washington Street
CITY: Falls Church
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    491 QGAGAAAAAYGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27 QEVGAATGAVVG----GVAGQ-------LFGKGSGRVSMAIGGAVLGG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QGAGAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.48;
35.38;
                                                                                                                                                                                                                                                                                                                                                   ISOLATED DNA CODING FOR SPIDER SILK
PROTEIN, A REPLICABLE VECTOR AND A TRANSFORMED CELL
CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
                                                                                    US/08/425,069
                                                                                                                    Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 78.5; DI
Pred. No. 1.7;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                               US-08-317-844B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-317-844B-2
             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Lewis, Randolph V.
APPLICANT: Xu, Ming
APPLICANT: Hinman, Michael B.
TITLE OF INVENTION: ISOLATED DN
TITLE OF INVENTION: PROTEIN, A
TITLE OF INVENTION: CONTAINING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
                                                                                                            TELEFAX: (703) 241-2848
TELEX: 248345
INFORMATION FOR SEC ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; MOLECULE TYPE: protein US-08-425-069-2
                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2,
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                               MOLECULE TYPE:
                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 14
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
TELEPAX: (703) 241-2848
                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 718 amino acid
TYPE: amino acid
                                                                                                  TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 04-OCT CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
STREET: 3(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28,977
REFERENCE/DOCKET NUMBER: 144
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Falls Church
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: UZIP: 22046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   491 QGAGAAAAAAYGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64 LIGSKIGO 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27 QEVGAATGAVVG----GVAGQ------LFGKGSGRVSMAIGGAVLGG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2, Application US/08317844B
5. 5989894
                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Virginia
Y: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1: 718 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Birch, Stewart, Kolasch & Birch
301 No. 5989894th Washington Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                             protein
                                                                                                                                                                                                                                                                                                                           04-OCT-1994
N: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISOLATED DNA CODING FOR SPIDER SILK
PROTEIN, A REPLICABLE VECTOR AND A TRANSFORMED CELL
CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
     9.48;
                                                                                                                                                                                                                                                                                                                                                       US/08/317,844B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.4%;
                                                                                                                                                                                                                                                                                                                                                                                      Release #1.0, Version #1.25
                                                                                                                                                                                                                                              1447-105P
   Score 78.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1447-106P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 78.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DΒ
 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17;
Length 718;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 718;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
```

RESULT 3 US-08-425-069-2

Patent No. 5728810 GENERAL INFORMATION:

COUNTRY:

E: Virginia TRY: U.S.A. 22046

Qγ В

₽ Ş

Matches Query Match

24;

Conservative

Local

Similarity

f,

þŗ

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                         Š
                                                        В
                                                                                                                                                                         IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: GI 1174414
US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
 В
                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-034-177-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/09034177 Patent No. 6127146
                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                    Matches
                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Lal, Preeti
APPLICANT: Guegler, Kail J.
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: HUMAN FIBROUS PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: PF-0486 US
TELECOMMUNICATION INFORMATION:
                                                          491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551 LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491 QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAGGAGQGG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 3174 POI
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                       TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: HEREW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 LIGSKIGQ 71
                           64 LIGSKIGQ 71
                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27 QEVGAATGAVVG----GVAGQ-----
                                                                                       27 QEVGAATGAVVG----GVAGQ-----
                                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                Local Similarity
                                                       QGAGAAAAAAVGAGQEGIRGQGAGQGGYGGLGSQGSGRGGLGGQGAGAAAAAAAGGAGQGG 550
LGGQGAGQ 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3174 Porter Drive
                                                                                                                                                                                                                                                                              747 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                       650-845-4166
                                                                                                                    Conservative
                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IBM Compatible
                                                                                                                                                                                                                                                                                                                                                       650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Incyte Pharmaceuticals, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEREWITH
                                                                                                                                                                                                                                                 single
                                                                                                                                9.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/09/034,177
                                                                                                                                                                                                                                                                                                                                                                                            36,749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 1.9;
                                                                                                                                Score 78.5;
Pred. No. 2;
                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                    ------LFGKGSGRVSMAIGGAVLGG 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----LFGKGSGRVSMAIGGAVLGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.0
                                                                                                                                              DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                            Length 747;
                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT; ORGANISM: E. US-09-553-498-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-553-498-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-067-351-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
                                                                                                        CURRENT APPLICATION NUMBER: US/09/067 35'

APPLICATION UMBER: US/09/067 35'
CLASSIETT: Herevitt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 8, Application US/09553498 Patent No. 6309861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Applic
Patent No. 599408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Schaeffner, Joerg
APPLICANT: Schwarz, Elisabeth
TITLE OF INVENTION: Process for the production of naturally folded and secreted
FILE REFERENCE: Case 20379
CURRENT APPLICATION NUMBER: US/09/553,498
CURRENT FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: EP99107412.1
PRIOR FILING DATE: 1999-04-26
NUMBER OF SEQ ID NOS: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Ambrosius, APPLICANT: Rudolph, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
REGISTRATION NUMBER: 39,132
REFERENCE/DOCKET NUMBER: PF-0511 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 855-0555
                                                    ATTORNEY/AGENT INFORMATION:
NAME: CERRONE, MICHAEL C
REGISTRATION NUMBER: 39,
                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Baughn, Mariah
TITLE OF INVENTION: HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Tang, Y. Tom
APPLICANT: Hillman, Jen
                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Corley, Neil C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106 SVEPVRTYORYNKQERRQQYCREFQQKAMI--AGQKQEIYGTACPQPDGRWQVISTE 160
                                                                                                                                                                                                                                                                                                                                STREET: 3174 PUR
CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 LGGLIGSKIGQSMDQQDKIK-LN-------QSLEKVKAGQVTRWRNPDTGNSY 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83 LQMTSLRSEDTAMYYCARDYGAY-WGQGTTVTVSSGGGGSGGGGGGGGGGGDIELTQSPAI 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 20.9
nes 37; Conservative
                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 LQGSSLIIISVFLVGCAQNFSRQEVGAATGAVV----GGVAGQLFGKGSGRVSMAIGGAV 60
                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SL----TISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKRAAAEQ-----KLISEE 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSASPGEKVTMTCSASSSVRYMNWFQQKSGTSPKRWIYDTSKLSSGVPARFSGSGSGTSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rudolph, Rainer
                                                                                                                                                                                                                                                                                                                    CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                       3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              coli
                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                        INCYTE PHARMACEUTICALS, INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dorothee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                 HUMAN KERATINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               us/09067351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 77.5; DB Pred. No. 0.62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-360-490-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
US-09-067-351-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
                                                                        TELEFAX: (650) 845-416
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
                                                                                                                  REFERENCE/DOCKET NUMBER: PE-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    equence 2, Application US/09360490 tent No. 6221843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: KERANOJ
CLONE: 2029060
                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS
CURRENT APPLICATION DATA:
IMMEDIATE SOURCE:
                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/067,351
                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: (CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Tang, Y. Tom
APPLICANT: Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS
                TOPOLOGY:
                           STRANDEDNESS:
                                                                                                                                                                   NAME: CERRONE, MICHAEL REGISTRATION NUMBER: 39
                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 3174 PUI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114 QRYNK 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                               FILING DATE:
                                                           ENGTH:
                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/09/360,490
                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54 GASFGSRSLYNLGGAKRYSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 GSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SK------IGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28;
                                                                                                                                                                                                                                                                                                                                                                                                       94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 22.4
28; Conservative
                                           amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                  CALIFORNIA
                                                          551 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                            3174 PORTER DRIVE
                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                     (650) 845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Corley, Neil C.
Baughn, Mariah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551
              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KERANOT02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INCYTE PHARMACEUTICALS, INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acids
                             single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.3%; Score 77;
22.4%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HUMAN KERATINS
                                                                                                                                                               39,132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2:
                                                                                                                                                   PF-0511 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
```

```
δÃ
                                   Db
                                                             QΥ
                                                                                                                                                    US-08-374-077C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-374-077C-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                          Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLONE: US-09-360-490-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/08374077C Patent No. 6027912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 9.3
Best Local Similarity 22.4
Matches 28; Conservative
                                                                                                                                                                                                                   TELEFAX: 703-836-2021
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                           2389 IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                                                                                TOPOLOGY: li
                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 02
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/0
FILING DATE: 19-JAN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: MCGOWAN, MAlcolm M
                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Genes Encoding an Invertebrate Alpha1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                       29 VGAATGAVVGGVAGQLFGKGSGRVSMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      171 EQQNK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111 PSFPVCPPGGIQEVTVNQSLLTPLHLQIDPTIQRVRAEEREQIKTLNNKFTSFIDKVRFL 170
                                                                                          Local Similarity
nes 32; Conserv
                                                                                                                                                                                                                                       TELEPHONE: 703-836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114 QRYNK 118
                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Alexandria
STATE: VA
                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54 GASFGSRSLYNLGGAKRVSLNGCGSSCRSGFGGRASNGFGVNSG---FGYGGGVGGGFSG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 GSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIG
-----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SK-----IGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTY 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22314-3187
                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hall, Li...
Ren, Dejian
Theng, Wei
                                                                                                                                                                                                           2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2029060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  699 Prince Street
                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dubald, Manuel Marcel Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BURNS,
                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Linda M.
                                                                                                     9.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOANE, SWECKER & MATHIS,
                                                                                                                                                                                                                                                                                                                                                                                      US/08/374,077C
                                                                                                                                                                                                                                                                                                              39,300
                                                                                                                                                                                                                                        2
                                                                                         18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28; Mismatches
                                                                                      Score 76.5; DI
Pred. No. 17;
L8; Mismatches
                                                                                                                                                                                                                                                                                                 022650-264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 77; I
Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                  Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                     ₽B
                                                                                       66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 551
                                                                                                                  Length 2516;
                                                                                       Indels
                                                                                      13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
밁
                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                         밁
RESULT 11
US-07-803-633A-13
: Sequence 13, Application US/07803633A
: Patent No. 5369025
                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-895-590-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-895-590-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application Patent No. 6207410 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 19-JAN-1995
ATTOREY/AGENT INFORMATION:
NAME: MCGOWAN, MALCOIM M.
REGISTRATION NUMBER: 39,300
REFERENCE/DOCKET NUMBER: 0220
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                             2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Dubaid, Manuel Marcel Paul
TITLE OF INVENTION: Genes Encoding an Insect Calcium Channel
NUMBER OF SEQUENCES: 101
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2508
                                                                                                                                                                   2508 GQGNQTYSS 2516
                                                                                                                                                                                                                                                                                                                                                                                         2389 IGSSNGSIFGGSAGGLGGAGSGGVG-GLGGSSSIRNAFGGSGSGPSSLSPQHQPYSGTLN 2447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2448 SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                   137 GOKQEIYGT 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Sin
                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                             29 VGAATGAVVGGVAGQLFGKGSGRVSMAIGG--AVLGGLIGSKIGQS----MDQQDKIKLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/374,888 FILING DATE: 19-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/895,590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                             SPPIPDNRLRRVATVTTTNNNNKSQVSQNNSSSLNVRANANSQMNMSPTGQPVQQQSPLR 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GOKOEIYGT 145
                                                                                                                                                                                                                                                                                                                                -----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GQGNQTYSS 2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 9.2%; Score 76.5; I Similarity 24.8%; Pred. No. 17; 32; Conservative 18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
)GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٧A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08895590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hall, Linda
Ren, Dejian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2516 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       703-836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BURNS, DOANE, SWECKER & MATHIS, LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Linda M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          022650-263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Watches 37; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                US-08-220-151-6
                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-07-803-633A-13
                                                                                                                                                                                                                                                                 Sequence 6, Application US/08220151
Patent No. 5529780
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                             APPLICANT: Paoletti,
APPLICANT: Limbach,
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 16
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 241-1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/803,63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Curtis, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Murphy Jr., Gerald
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 855 ....
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELLEFAX: 1.
TELEFAX: 248345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          796 DERKLEEAREMIKYMALVSAEER 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119 QERRQQYCRE-FQQKAMIAGQKQ 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    747 AAFL--AYRYVNKLKSNPMKALYPMTTEVLKA-QATRELHGEESDD------LERTSI 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             688 FMNGLAELFNGMGQVGQAIGKVVVGAAGAIVSTISG-VSAFMSNPFGALAIGLIIIAGLV 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: BIRCH, STEWART, KOLASCH & STREET: 301 No. 5369025th Washington CITY: Falls Church STATE: Virginia
                         ADDRESSEE: Curtur, emergy: 530 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66 GSKIGQSMDQQDKIKLN-----QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16 FLVGCAQNFSRQ-EVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22040-0747
  New York
NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      865 amino acids
                                                                                                                                      PAGLECH:
AGLECH:
PAGLECH:
PAGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (703) 241-2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAZERIAN, Keyvan
LEE, Lucy F.
YANAGIDA, No. 5369025oru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OGAWA, Ryohei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19911210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RECOMBINANT FOWLPOX VACCINE FOR PROTECTION AGAINST MAREK'S DISEASE 19
                                                                                Morris & Safford
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/07/803,633A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28,977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1644-103P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 76; DB 1;
Pred. No. 4.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 865
```

Indels

30;

Gaps

8;

gD AND USES THEREFOR

```
RESULT 13
US-08-413-118-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: peptide
; FRAGMENT TYPE: N-terminal
US-08-220-151-6
                                                                                                                                                                                                                                                                                                                                                                               Sequence 6, Application US/08413118 Patent No. 5688920
                                                                                                                                                                                                                                                                                                                                                                                             Sequence 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 9.0
Best Local Similarity 23.6
Matches 37; Conservative
                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: PAOLET
APPLICANT: LIMBAC
                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compartible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 25,506
REFERENCE/DOCKET NUMBER: 444310-2540
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 840-333
TELEFAX: (212) 840-0712
TELEX: 42506 CURTMS
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                               APPLICATION NUMBER: FILING DATE: 29-MAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  873 QQEHKARKKNSGPALLASRVGAMATRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                   CLASSIFICATION:
                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                  CITY: NEW YORK
STATE: NEW YOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           753 VILRGIANFFQGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91 GOVTRWRNPDTGNSYSVEPV----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66 GSKI-----A 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 913 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 30-MAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM:
SOFTWARE: Patenti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                 10036
                                                                                                                                                                                                NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Frommer, William
                                                                                                                                                                                                                      E: CURTIS, MORRIS & SAFFORD, P.C. 530 FIFTH AVENUE, 25TH FLOOR
                                                                                                                                                                        UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                         LIMBACH,
                                                                                                                                                                                                                                                                                                                                         PAOLETTI,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                               29-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9.0%; Score 74.5;
23.6%; Pred. No. 7
                                                                                                                                                                                                                                                                                 KEITH J.

NUCLEOTIDE AND AMINO ACID SEQUENCES
CANINE HERPESVIRUS 9B, 9C, AND 9D AV
                                                                                                                                                                                                                                                                            128
                                           US/08/413,118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/220,151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                 gD AND USES THEREFOR
                                                                                                                                                                                                                                                                                                    얽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5,
```

```
US-08-473-446-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-413-118-6
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 840-3333
TELEPAX: (212) 840-0712
INFORMATION FOR SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6, Application US/08473446 Patent No. 6017542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match 9.0%;
Best Local Similarity 23.6%;
Matches 37; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                    ATTORNEY/AGENT INFORMATION:
NAME: FROMMER, WILLIAM S
REGISTRATION NUMBER: 25,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212) 840-071
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS: CURTIS, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: LIMBACH, TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: PAOLETTI, ENZO APPLICANT: LIMBACH, KEITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: FROMMER, WILLIAM S.
REGISTRATION NUMBER: 25,506
REFERRNCE/DOCKET NUMBER: 50
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 840-3333
                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                     STREET: 530 EIFTH AVENUE, 25TH FLOOR CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         753 VILRGIANFFOGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGILVLAGLV 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 30-MAR-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91 GOVTRWRNPDTGNSYSVEPV-----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66 GSKI-----A 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 913 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/220,151 FILING DATE: 30-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2) 840-0712
) 840-0712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUCLEOTIDE AND AMINO ACID SEQUENCES OF
CANINE HERPESVIRUS 9B, 9C, AND 9D AND USES THEREFOR
128
                                                                                                                                                        08/413,118
                                                                                                                                                                                                                              US/08/473,446
                                                                               25,506
                                                                                                        ŝ
                                                                    454310-2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454310-2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 74.5;
Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 P.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
```

```
APPLICANT: AUDONNET et al.
TITLE OF INVENTION: POLYNUCLEOTIDE VACCINE FORMULA AGAINST PORCINE
TITLE OF INVENTION: REPRODUCTIVE AND RESPIRATORY PATHOLOGIES
FILE REFERENCE: 454313-2230
CURRENT APPLICATION NUMBER: US/09/232,468A
CURRENT FILING DATE: 1999-01-05
NUMBER OF SEQ ID NOS: 54
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 2
LENGTH: 913
TYPE: PRT
ORGANISM: Pseudorabies virus
US-09-232-468A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
US-09-232-468A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
Search completed: October 27, 2002, 11:12:13 Job time: 9.34197 secs
                                                                                          밁
                                                                                                                            Ş
                                                                                                                                                                            밁
                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-473-446-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/09232468A Patent No. 6207165
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     Query Match 9.0%; Score 74.5; DB 4; Length 913; Best Local Similarity 23.6%; Pred. No. 7.4; Matches 37; Conservative 18; Mismatches 51; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 913 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                         813 AAFLAYRHISRLRRNPMKALYPVTTKTLKEDGVDEGDVDEAKLDQARDMIRYMSIVSALE 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          753 VLLRGIANFFQGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                                                                                                                                                                                                  753 VLLRGIANFFQGLGDVGAAVGKVVLGATGAVISAVGGMVSFLSNPFGALAIGLLVLAGLV 812
                                                                                        873 QQEHKARKKNSGPALLASRVGAMATRRRHYQRLESED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                y Match 9.0%; Score 74.5; DB 3; Length 913; Local Similarity 23.6%; Pred. No. 7.4; hes 37; Conservative 18; Mismatches 51; Indels 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 VFLVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                          15 VELVGCAQNF-SRQEVGAATGAVVGGVAGQLFGKGSGRVS------MAIGGAVLGGLI 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91 GOVTRWRNPDTGNSYSVEPV----RTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66 GSKI-----A 90
                                                                                                                                   91 GOVTRWRNPDTGNSYSVEPV-----RTYQRYNKQE 120
                                                                                                                                                                                                                    66 GSKI-----A 90
                                                                                                                                                                                                                                                                                                                                                        Indels 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51;
                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                        5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ა,
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
          L L C C B Z B C B A B Z L
                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                           Score
                        832
832
815
815
112
111
102.5
102.5
101
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                         Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-677-374-4
832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
                        100.0

100.0

98.0

98.0

13.5

13.3

12.3

12.3

12.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            747574 seqs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                October 27, 2002, 10:58:51;
                                                                                                                                                                                                                                                                                                                                                                                                                      10:
11:
12:
13:
14:
15:
16:
16:
17:
18:
19:
20:
21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapop 10.0 , Gapext 0
                                                                                                                                                                                                                                                                                                                                                                                                          SIDSI/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*

/SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MRGCLQGSSLIIISVFLVGC.....IYGTACPQPDGRWQVISTEK 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _Geneseq_032802:*
                                                                                                                                                                                                                                           Length
      161
256
162
162
162
20
224
223
223
230
154
                                                                                                                                                                                                                                             DB
        AAB81127
AAB81128
AAG781265
AAB81126
AAB81130
AAB20105
AAB20105
AAY34367
AAY34367
AAY34367
AAR05799
ABG15906
                                                                                                                                                                                                                                             IJ
                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Search time 21.4111 Seconds
(without alignments)
835.217 Million cell updates/sec
Optimised OspA pro
C17E2 OspA constru
Piscirickettsia sa
OspA antigen amino
OspA B-cell epitop
Moraxella catarrha
Porphorymonas ging
PBOMP-2 gene prod.
Novel human diagno
Spider recombinant
                                                                                                                                                                                                                          Description
```

Neuronal invertebr		17	2516		76.5	45
eria meni	AAY75	21	2599		77	44
keratin		21	551	-	77	43
		22	285	-	77	42
		21	285		77	41
signal p		21	285		77	40
O)	AAB57121	21	223	9 3	77	39
Pseudomonas aerugi		22	514	-	77.5	38
		22	354	9.3	77.5	37
Human polypeptide		22	302		77.5	36
Human polypeptide		22	285	٠	77.5	35
\vdash		22	285	9. 3	77.5	34
		21	285		77.5	ü
Human PRO284 prote		20	285		77.5	32
E. carotovora PelB		22	255		77.5	31
Expression plasmid	AAB70769	22	255	-	7.	30
lB-scF		22	255		7.	29
E. coli expression		21	255	9.3	7	28
_		22	102		7.	27
Œ		21	718	9.4	8	26
Nephila clavipės s		19	718	9.4	8	25
pes dragli		12	718	9.4	œ	24
Sil		20	651	9.4	78.5	23
_		21	618	9.6	9	22
		22	542	9.7	0	21
		22	542	9.7	0	20
		22	542	9.7	80.5	19
Ō		22	666	9.7	81	18
Novel human diagno		22	2017	•	82	17
fusion of ar	AAB3069	22	423	•	83	16
0		19	116	10.0	83	15
la		22	1251		84	14
	_	22	2309	10.4	86.5	13
Drosophila melanog	ABB69847	22	147	10.5	7.	12

ALIGNMENTS

RESULT 1 AAB81127

AAB81127 standard; Protein; 161

B

SRS.

Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease;

Optimised OspA protein 17E2 amino acid sequence.

11-JUL-2001 (first entry)

```
Key
Region
                                                                                  Piscirickettsia Synthetic.
Kay WW,
                                             17-MAR-2001.
                                                       CA2281913-A1
        (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                           17-SEP-1999;
                                    17-SEP-1999;
Burian J,
                           99CA-2281913
                                    99CA-2281913
                                                                                      salmonis
                                                                    Location/Qualifiers
                                                                /label=
Kuzyk MA;
                                                                B_cell_epitope
```

```
ACC XXX ACC DIT CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTROL OF CONTRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
AAB81128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 161
                   17-SEP-1999.;
                                                                      17-MAR-2001.
                                                                                                                       CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Polkilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB81128
                                                                                                                                                                                                                                                                                                     Region
                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                       Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB81128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia P. salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed Ospa, or an immunogenic fragment of particularly poikilothermic fish, against the bacterial pathogen particularly poikilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial diseases. The present encoding Ospa 17E2 (AAP86247) has been optimised for expression in Ecsherichia coli. An Ospa protein with an N-terminal fusion partner is used in a vaccine to create an anti-Ospa antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGGLIGSKIGOSMDOQDKIKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OspA construct with N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                     fusion construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fig 5; 35pp; English.
                99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                       salmonis
                                                                                                                                                                                                                      96..256
/label=
                                                                                                                                                                                                                                                       /label= Undefined_N-terminal_fusion_partner
                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                          l= C17E2_OspA
= "Product of OspA c
Escherichia coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 832; DB 2
Pred. No. 3e-81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                             OspA gene optimised for expression coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                septicaemia; rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fusion partner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT 3
AAG78025
ID AAG7
XX AAG7
XX AAG7
XX 15-J
XX Pisc
XX Pisc
XX Pisc
XX Sept
KW Sept
KW ATCC
XX AG7
XX MO20
XX Pisc
XX Pisc
XX Pisc
XX Pisc
XX Pisc
XX II-M
PR 11-M
PR 11-M
PR 11-M
                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
11-MAR-2000;
01-JUL-2000;
                                        12-MAR-2001;
                                                                   20-SEP-2001
                                                                                            WO200168865-A2
                                                                                                                       Piscirickettsia
                                                                                                                                                  Piscirickettsia
septicaemia; SRS
ATCC VR-1361.
                                                                                                                                                                                               Piscirickettsia salmonis polypeptide P10.6.
                                                                                                                                                                                                                                  15-JAN-2002
                                                                                                                                                                                                                                                                                 AAG78025 standard; Protein; 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, P. salmonis. The method is also useful for protecting partnogen rickettsial septicaemia (SRs) and other rickettsial diseases. The present construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Method for protecting poikilothermic fish against salmonid rickettsial septiloaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                           216
                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KAYW/) KAY W W.
(BURI/) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                  RRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                RRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                 LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 120
                                                                                                                                                                                                                                                                                                                                                                                                   LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       \tt MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-316844/34.
DB; AAF86248.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          256
2000GB-0005838
2000GB-0016080
                                        2001WO-GB01055
                                                                                                                                                              SRS; surface
                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; ilarity 100.0%; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                       salmonis
                                                                                                                                                                         salmonis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kuzyk MA
                                                                                                                                                            piscirickettsiosis; salmonid rickettsial;
antigen; vaccine; antibacterial; fish;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 832; DB 22;
Pred. No. 5.4e-81;
D; Mismatches 0;
                                                                                                                                                                                                                                                                                    AA
                                                                                                                                                           vaccine;
                                                                                                                                                                                                                                                                                                                                                  256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                        155
                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
```

0

ρ

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SXCCCCCX PX PTTX RR PTX PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Simard
Burzio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to nucleic acid sequences and the encoded p of a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity protect fish against P. salmonis which causes piscirickettsiosis,
                                                                                                                                                                             CA2281913-A1
                                                                                                                                                                                                                                                                                                                                     Poikilothermic vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                          OspA antigen
                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB81126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New nucleic acids encoding an amino acid
surface antigen present on Pisciricketts
protect fish against piscirickettsiosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUL-2000;
29-JUL-2000;
 (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A
                                                                         17-SEP-1999;
                                                                                                                                          17-MAR-2001
                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                   Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB81126 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI;
                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ( AQUA - )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ROQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-639050/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŗz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAH79040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQUA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                          amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000GB-0016082.
2000GB-0018599.
                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ā
                                                                                                                                                                                                                                                                                                                                     fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25pp;
                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                   salmonis
                                                                                                                                                                                                                /label=
                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EURO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                                                              B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    an amino acid sequence homologous to to Piscirickettsia salmonis are useful to rickettsiosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 815; DB
Pred. No. 2e-7;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              815; DB 22
No. 2e-79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Griffiths S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Valenzuela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                       disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to
, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
 RESULT 5
AABB1130
IID AABB
AAB1130
AABB1130
AABB1130
AC AABB
AC AABB
AC OSpA
XX
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-J
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-S
DT 11-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kay
                    Kay WW
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                            Poikilothermic vaccine; OspA; SRS; antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a s. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animal particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The presest sequence represents P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody.
(KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a septicaemia and other rickettsial diseases comprises administering a
                                                             17-SEP-1999;
                                                                                        17-SEP-1999;
                                                                                                                      17-MAR-2001
                                                                                                                                                   CA2281913-A1
                                                                                                                                                                                 Piscirickettsia
                                                                                                                                                                                                                                                                          OspA B-cell
                                                                                                                                                                                                                                                                                                       11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                   AAB81130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 2; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
158; Conserv
KAY W W.
BURIAN J.
KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAF86246
                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Burian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 AA;
                                                                                                                                                                                                                                                                          epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                             fish; Pis
salmonid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2B; 35pp; English.
                                                             99CA-2281913
                                                                                         99CA-2281913
   Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the OspA protein of Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                   Peptide;
                                                                                                                                                                                                                                                                        peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98.0%;
                                                                                                                                                                                                                            Piscirickettsia salmonis; rickettsial pathogen; nid rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 815; DB 22;
Pred. No. 2e-79;
1; Mismatches 1;
                                                                                                                                                                                                                                                                           #2
                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                   AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            animals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O.
```

0

Burian

Kuzyk

MA

2001-316844/34.

```
RESULT 6
AAB20105
ID AAB2
XX AAB2
AC AAB2
AC AAB2
XX BASB
BC MOTA
XX BASB
KW ANTI
XX WO20
PN WO20
XX WO20
PD 04-J
XX 25-J
XX WEW
PT USSI
PN WPI
DR N-PE
XX NEW
PT USSI
PT USSI
CC CAT
CC BASI
CC BASI
CC EXP
CC COM

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
The present sequence is that of BASB113 protein from Moraxella catarrhalis strain Mc2931 (ATCC 43617), a causative agent of otitis media in children and pneumonia in adults. The invention provides BASB113 polypeptides, and polypucleotides encoding them, as well as expression vectors, host cells and methods for producing BASB113 polypeptides using recombinant methods. Also claimed is a vaccine composition comprising a BASB113 polypeptide, an immunogenic
                                                                                                                                      New BASB113 polypeptide isolated from Moraxella catarrhalis bacterium, useful for diagnosing and producing vaccines against bacterial infections such as otitis media and pneumonia
                                                                                                                         Claim 1; Page 67; 86pp;
                                                                                                                                                                                                               WPI; 2001-112458/12.
N-PSDB; AAF30043.
                                                                                                                                                                                                                                                                          (SMIK ) SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                         23-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                       04-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                W0200100836-A1
                                                                                                                                                                                                                                                                                                                                                                                                                        Moraxella catarrhalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASB311; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Moraxella catarrhalis BASB113 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB20105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB20105 standard; Protein; 224 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 PVRTYQRYNKQERRQQYCRE 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PVRTYQRYNKQERRQQYCRE 20
                                                                                                                                                                                                                                                                                                                                      2000WO-EP05851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                            99GB-0015044
                                                                                                                                                                                                                                                                                                                                                                                                                                                   antimicrobial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Otitis media; pneumonia; therapy; diagnosis;
                                                                                                                         English.
```

AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PG) polypeptide sequences given in AAN AAY34583. AAX91802 to AAX91989 represent PCR primers used in the

AAY34318

ť

```
RESULT 7
AAY34487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88888888x&
                                     Claim 1;
                                                                                                                                                                   05-MAY-1998;
22-MAY-1998;
29-JUL-1998;
                                                          Antigenic Porphorymonas gingivalis peptides
                                                                                                                     Ross
                                                                                                                                                                                                                             04-AUG-1998;
10-DEC-1997;
31-DEC-1997;
30-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                     WPI; 1999-385613/32
N-PSDB; AAX91705.
                                                                                                                                Agius
                                                                                                                                               (CSLC-) CSL LTD.
                                                                                                                                                                                                  23-APR-1998
                                                                                                                                                                                                            10-MAR-1998;
09-APR-1998;
                                                                                                                                                                                                                                                                               10-DEC-1998;
                                                                                                                                                                                                                                                                                                   17-JUN-1999
                                                                                                                                                                                                                                                                                                                      W09929870-Al
                                                                                                                                                                                                                                                                                                                                       Porphorymonas gingivalis
                                                                                                                                                                                                                                                                                                                                                                   Porphorymonas gingivalis;
                                                                                                                                                                                                                                                                                                                                                                                          Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                               25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY34487 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY34487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polypeptide or antibody. A claimed therapeutic composition useful in treating humans with M. catarrhalis infection comprises at least latibody directed against a BASB113 polypeptide. BASB113 polypeptides also have utility in raising specific antibodies, and in screening for antibacterial drugs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fragment of a BASB113 polypeptide, or a polypeptide having at least 85% and no acid sequence identity to BASB113, or comprising a polynucleotide encoding such a polypeptide. A claimed method of diagnosing a Moraxella infection involves identifying a BASB113 polypeptide or antibody. A claimed therapeutic composition useful polypeptide or antibody.
                                                                                                             , CT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKTGRDAILGAAVGAAAGAYMERQAK----QIEQQMQGTGVTVTHDTDTGN 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GVVLLASSMALAGCANTGT---TGNGTGFGGANVNKAVIGAVAGAL---GGTAISKATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----AVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGN 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSSLIIISVFLVGCAQNFSRQEVGAATG-----AVVGGVAGQLFGKGSGRVSMAIGG
                                   Page 469;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37; Conserv
                                                                                                                Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                              antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224 AA;
                                                                                                                                                                 98AU-0002264
98AU-0002911
98AU-0003128
98AU-0003338
98AU-0003654
98AU-0004917
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                     gingivalis protein PG3
                                                                                                                                                                                                                           97AU-0001182.
98AU-0001546.
                                                                                                                                                                                                                                               98AU-0005028
97AU-0000839
                                                                                                                                                                                                                                                                             98WO-AU01023
                               588pp;
                                                                                                              Hocking DM,
Webb EA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13.3%;
                              English.
                                                                                                                                                                                                                                                                                                                                                                   PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    223
                                                                                                                                                                                                                                                                                                                                                           periodontal disease; gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 111; DB 22;
Pred. No. 0.00097;
                                                                                                                      Margetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                     MΒ,
                                                           for
                                                         preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35;
                                                                                                                  Patterson MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58
```

ρy

Matches

20;

Conservative

Query Match

Local

Similarity

13.5%; Score 112; DB 22; 100.0%; Pred. No. 3.3e-05; ^. Mismatches 0;

Length Indels

20;

Š

0; Gaps

0;

This invention relates to a method for the protection against intection of a poikilothermic fish by the bacterial pathogen, piscirickettsia salmonis. The method comprises administering an immunogenic amount of a period particularly poikilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents an immunogenic epitope of the P. salmonis OspA.

Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -

Example 2; Page 17; 35pp; English.

Šù,

```
RESULT 8
AAY34362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 25
                                                                                                                                                                                                                                                                                         04-AUG-1998;
10-DEC-1997;
31-DEC-1997;
30-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can be used to detect Porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease especially gingivitis.
AAX91536 to AAX91801 encode two hundred and sixty six antigenic Porphorymonas gingivalis (PG) polypeptide sequences given in AAX34318 to AAX94583. AAX91802 to AAX91989 represent PCR primers used in the isolation of the PG polypeptides. The PG polypeptides have antibacterial activity with a vaccine mechanism of action. The PG polypeptides can be used as vaccines especially against Porphorymonas gingivalis. Probes can
                                                                               Claim
                                                                                                  Antigenic Porphorymonas gingivalis peptides gingivitis
                                                                                                                                                                                                                                                                   10-MAR-1998,
09-APR-1998,
                                                                                                                                                                                                                                                                                                                                                                     17-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                           WO9929870-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                     Porphorymonas gingivalis; vaccine; antigenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY34362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY34362 standard;
                                                                                                                                                                              Agius
                                                                                                                                                                                                                        29-JUL-1998;
                                                                                                                                                                                                                                               05-MAY-1998
                                                                                                                                                                                                                                                           23-APR-1998
                                                                                                                                                                                                                                                                                                                                                10-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                               Porphorymonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                    (CSLC-) CSL LTD.
                                                                                                                                                                                                                                     22-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 ALIGKKMDKQKK 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                     1999-385613/32.
DB; AAX91580.
                                                                                                                                                                    BC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASVLAVALVFAGCGLN--NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSM-AIGGAVLGGLIG
                                                                              1; Page 325-326;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 34.7
25; Conservative
                                                                                                                                                                    Barr IG,
Rothel LJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gingivalis protein
                                                                                                                                                                                                                                                                                                                                                                                                               gingivalis
                                                                                                                                                                                                                       98AU-0005028
97AU-0001182
97AU-0001186
98AU-0001546
98AU-0002264
98AU-0002911
98AU-0003128
98AU-0003318
98AU-0003318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽,
                                                                                                                                                                                                                                                                                                                                                98WO-AU01023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12.3%;
                                                                                                                                                                    Hocking DM,
Webb EA;
                                                                            588pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                PG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                               periodontal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PG3.
                                                                                                                                                                              Margetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            102.5; DB
No. 0.0079;
                                                                                                                                                                                                                                                                                                                                                                                                                                                disease;
                                                                                                                                                                              MB,
                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                                                                                                                                                                            Patterson
                                                                                                              preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                              gingivitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223;
                                                                                                                                                                              MA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

Ş

29 VGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKL

Matches

21;

Conservative

9;

Indels

Gaps

0

81 0 Similarity

```
RESULT 9
AAR05799
                                                                                                                                                                                                                       \begin{array}{c} \mathsf{X} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf{C} \times \mathsf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                              The PBOMP proteins were isolated from a PBOMP-enriched insoluble cell wall fraction from physically disrupted cells of H. influenzae cell the solubilising the PBOMP from the cell wall fraction by heating in the presence of a detergent or digesting the cell wall fraction with lysozyme, opt. in the presence of a detergent. The genes encoding the PBOMP proteins were isolated by screening a DNA library encoding the PBOMP proteins were isolated by screening a DNA library encoding the PBOMP proteins were isolated by screening a DNA library encoding the PBOMP proteins were isolated by screening a DNA library encoding the PBOMP proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening a DNA library encoding the proteins were isolated by screening and proteins were isolated by screening a DNA library encoding the proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by screening and proteins were isolated by sc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           be used to detect Porphorymonas gingivalis in standard hybridisation assays. Porphorymonas gingivalis is involved in periodontal disease especially gingivitis.
                                                                                                                                                                                                                                                                                                               with lysozyme, opt. in the presence of a detergent. The encoding the PBOMP proteins were isolated by screening with an oligonucleotide probe based on the amino acid s PBOMP protein, or using antibodies to PBOMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Outer membrane protein epitopes of Haemophilus the prodn. of antibodies, in vaccines and for p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-SEP-1988;
21-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR05799;
                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Anilionis A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (PRAX-) PRAXIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-AUG-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-MAR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9002557-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Praxis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PBOMP-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR05799 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1990-115815/15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SKIGQSMDQQDK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ASVLAVALVFAGCGLN---NMAKGGLIGAGVGGAIGAGVGNVAGNTAVGAIVGTAVGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGKKMDKQKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSLITISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSM-AIGGAVLGGLIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        membrane proteins;
Biologics Outer Mo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ03870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 34.º
25; Conservative
                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fig 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seid
                                                                                                                                                                                                                                 AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BIOLOGICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88US-0239572.
89US-0396572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89WO-US03779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein; 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             164pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12.3%;
                                                                         12
39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Membrane Protein
                                                                    . 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Deich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PBOMP-2; immunisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13;
                    Score 101; DE
Pred. No. 0.00
9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 102.5; DB Pred. No. 0.0082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RΑ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zlotnick GW,
J.0071;
23;
                                                                                                                             DВ
                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          influenzae- used in
prodn. of reagents fo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Green
                                                                                                              Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                         sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>س</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                by heating
                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
```

밁

```
RESULT 10
ABG15906
AG ABG15
XX ABG15
XX ABG15
XX ABG15
XX ABG15
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Homo
XX Hom
                                                                                                                                                                                                                                                                                                                                                                                                             CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC contentifying expressed genes (I) is useful in gene therapy techniques CC (II). (II) is useful in gene therapy techniques CC (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as CC imaging of sites expressing (II). (I) and (II) are useful for treating CC imaging of sites expressing (II). (I) and (II) are useful in medical disorders involving aberrant protein expression or biological activity. CC diagnostics, forensics, gene mapping, identification of mutations cresponsible for generatic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and CC diagnostic amino acid sequences of the invention.
                                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                Note: The sequence data for this patent did not appear in the specification, but was obtained in electronic format directly
                                                                                                                                                                                                                                                                                                      Sequence
                                   185 IISILPAKVAVDNSQNKRNAQAFGALIGAVAGGVIGHNVGSGSNSGTTAGAVGGGAVGAA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutation responsible for genetic disorders or other traits and to assess biodiversity -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 20; SEQ ID No 46265; 103pp; English.
                                                                                         12 IISVFLVGCAQNFSR-----QEVGAATGAVVGGVAGQLFGKG--SGRVSMAIGGAVLGGL 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W0200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel human diagnostic protein #15897.
                                                                                                                                                                                                                                                                                                                                                ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABG15906 standard; Protein; 309 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 VGTLGGGALGGIAGSTIGGGRGQAIAAVVGAIGGAIAGSKIEEKMSQVNGAEL 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a; chromosome mapping; gene mapping; gene therapy; forensic;
supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                      309
                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                         11.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tang YT;
                                                                                                                                                                            12;
                                                                                                                                                                Score 95; DB:
Pred. No. 0.07
12; Mismatches
                                                                                                                                                                                            DB 22;
0.077;
                                                                                                                                                                39;
                                                                                                                                                                                                                         Length 309;
                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mutations
                                                                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                      from WIPO
                                                                                                                                                      Gaps
                                                                                                                                                         ω
PI
XX
DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PA
PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX ACC XXX AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PA
PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
```

Дb Ş

```
RESULT 11
AAB82611
resulting lysate is further purified by ion-exchange or affinity chromatography and processed into an aqueous-based mixture for into vector pET24 for recombinant expression in Escherichia coli, containing denaturant (3 M quanidine-HC1) and by affinity chromatography on nickel-NYA agarose. Products obtained using the materials including films, fibres, woven articles, sutures, ballistic protection, parachutes and parachute cords. The new method has the following advantages over prior art: it involves fewer steps, requires less time and smaller volumes of reagents,
                                                                                                                                                                                                                                                                                           provides methods for purifying and spinning spider silks and other structural proteins. Organic acids are used to lyse recombinant cells or other biological samples (such as non-recombinantly derived cells), and enrich the purity and yields of structural proteins by hydrolysing many of the macromolecules while leaving the structural proteins intact. In the case of silk proteins, the
                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is that of the orb-weaver spider (Nephila clavipes) recombinant silk protein pETNcDS. The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Recovering structural polypeptides in a biological sample, useful for purifying and spinning spider silks and other structural proteins, comprises treating the sample containing the polypeptides with an acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; AAH26304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-483136/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mello CM, Arcidiacono S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ARCI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-2000; 2000WO-US30086.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
Misc-difference 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MELL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Misc-difference 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200153333-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers Misc-difference 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nephila clavipes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spider; orb-weaver; spurification; fibre;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Spider recombinant silk protein pETNCDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB82611 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    245 AGSMVNDKTLMEGVSLTYKEGTKVYTSTQVGKEFQFT 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IGSKI-----GQSMDQQDKIKLNQSLEKVKAGQVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BUTLER M M.
US SEC OF ARMY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MELLO C M.
ARCIDIACONO S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 41-42; 49pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            orb-weaver; silk protein; pETNcDS; structural protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-0490291.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note= "encoded by CGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    spinning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "encoded by GAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "encoded by TAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Butler MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
```

Ř

```
RESULT 12
ABB69847
ID ABB69
XX ABB69
XX 26-MA
XX Drosc
KW Drosc
KW Pharm
XX Drosc
XX Pharm
XX PF 23-MA
PF 23-MA
PR 111-JU
XX Vente
XX WP1:
DR WP1:
DR WP1:
DR WP1:
DR WP1:
DR WP1:
CC Capat
CC useft
CC useft
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC discl
CC d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
  밁
                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                          capable of detecting 1000 or more genes from Drosophila. The invent useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL18176-ABL30511), expressed DNA sequences (ABL1840-ABL16175) and the encoded proteins (ABB18737-ABB72072).
                                                                                                                                                                                                                   The sequence data for this patent did not form specification, but was obtained in electronic f at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated nucleic acid genes from Drosophila and interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; SEQ ID NO 36333; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB69847 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               results
is easy
                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (PEKE ) PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 АВВ69847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       benign
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320 QGAGAAAAAAAGGAGQGGLGGQGAGAAAAAAGGAGQGGLGGQGAGQ 366
    11
                                            36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27 QEVGAATGAVVGGVAGQ--LFGKGSGRVSMAIGGAVLGGLIGSKIGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-656860/75
DB; ABL13950.
                                            VVGGVAGQLFGKGSGRVSMA-----
VTSGISS--LGLGNRRFSLSRQESSEQQSGIGGAIPGGLVSGQAQQQQQQQVPFPQQPLQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s in better recovery of protein at higher purity (70-99%), y to scale up, and the fibres are spun in an environmentally solution reducing hazardous waste accumulation and cost.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
23; Conserv
                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     melanogaster polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          528 AA;
                                                                                                                                                                                  147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                  <u>Α</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10.6%;
                                                                                                                10.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    detection reagent for detecting 1000 for elucidating cell signalling and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           biology; cell signalling; insecticide;
                                                                                           18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
••
                                                                                                              Score 87.5; DB Pred. No. 0.19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 88; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                         -- IGGAVLGGLIGSKIGQSMDQQ---DKIKLN 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB .
1.87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ID NO 36333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                           38;
                                                                                                                                   22;
                                                                                                                                                                                                                                               m part of the printed format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                         Indels
                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71
                                                                                                                                   147;
                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention
                                                                                           39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or more
                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                  WIPO
                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                         7;
```

```
RESULT 13
ABB66232
                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
В
                                                                              Вb
                                                                                                                                                                                                                                             В
                                                                                                                ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IJ
                                                                                                                                                           Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventi useful in developmental biology and in elucidating cell signalling a cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16175) and the encoded proteins (ABL5737-ABB72072).

The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained in electronic format directly from Was obtained for electronic format directly fr
                                                                                2124
2179 GSVGQS----GGGGQGRYPTPIQRPNNYPQHP---
                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABB66232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABB66232 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New isolated nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-656860/75
N-PSDB; ABL10335.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                  at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            interactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 VYGTPAP-PTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142 IYGTACPQPDG
                                        79
                                                                                                                      22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83
                     QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCR-EFQQKAMIAGQKQE
                                                                                QQQQQRQVGGGNGPSMNALGGRGSGAVGSGSGN-----GGGGGGGGAGGSQVGGNGGGNGV
                                                                                                                  QNFSRQEVGAATGA----VVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QSLPQQQQQQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JC,
                                                                                                                                                        l Similarity
34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       melanogaster polypeptide SEQ
                                                                                                                                                                                                                                             2309 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 25488; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   developmental
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein; 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acid
a and
                                                                                                                                                                                10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ľ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   biology;
                                                                                                                                                             18;
                                                                                                                                                                                Score 86.5;
Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myers
                                                                                                                                                        ed. No. 8.5;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----QQQQQQQLQQQHGHAPLQQQASI-GSGLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ID
- QQQQQQQQQQQQQREQAAAAAVAA
                                                                                                                                                                                                     DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
O
                                                                                                                                                             55;
                                                                                                                                                                                                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25488
                                                                                                                                                               Indels
                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention
                                                                                                                                                                                                     2309;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1000 or more and cell-cell
                                                                                                                                                             17;
                                                                                                                                                             Gaps
2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                        137
                                                                                                                                                                                                                                                                                                         WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ıs
                                                                                                                                                             S
```

QΥ

138

QKQE

141

```
밁
                        Qy
                                                  В
                                                                         ρy
                                                                                                   망
                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
ABB61254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                      Matches
                                                                                                                                                                             Query Match
   1023
                                                                                                                                                                                                                                                                Insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072).
                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                           specification,
                                                                                                                                                                                                                                                     The sequence data for this patent did not form
                                                                                                                                                                                                                                                                                                             capable of detecting 1000 or more genes from Drosophila. The inventuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of
                                                                                                                                                                                                                                                                                                                                                                             Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                              New isolated nucleic acid genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2231
                                                                                                                                                                                                                                                                                                                                                  The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Venter JC, Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila; developmental biology; cell signalling; insecticide;
pharmaceutical.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster polypeptide
                                                                                                    915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PEKE ) PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB61254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABB61254 standard; Protein; 1251 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-MAR-2002 (first entry)
                                                                           61
                                                                                                                                                                 Local
                                                                                                                      1 MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV 60
                                                                                                                                                                                                                            ftp.wipo.int/pub/published_pct_sequences.
                                                                                              MQGQMQGQMQGQMSGQMPG---QMPGQMPGQMPGQMAGQMAGQMPGQMPGQMPGQMSGQM 971
  QKKPRYFVAMFDYDP----
                       QERROQYCREFQQKAMIAGQKQEIYGTACPQPDG
                                               PGQMMGPRGPLNQQQQQQQQQQQQQQMQQGQMAGQQ----QQAQPG---
                                                                     LGGLIGSK--IGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNK 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QRAQ 2234
                                                                                                                                                      35;
                                                                                                                                                                Similarity
                                                                                                                                                                                                      1251 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORP NY
                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 10554;
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                        but was obtained in electronic
                                                                                                                                                              10.1%;
22.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ŀi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PWD,
                                                                                                                                                                                                                                                                                                                                                                                                             detection reagent for detecting for elucidating cell signalling
                                                                                                                                                   28;
                                                                                                                                                              Score 84; DB 22;
Pred. No. 7.1;
                                                                                                                                                                                                                                                                                                                                                                        21pp + Sequence Listing; English.
-STMSPNPDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Myers
                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 10554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ĘW;
 1046
                        152
                                                                                                                                                   67;
                                                                                                                                                                                                                                     n part of the printed format directly from
                                                                                                                                                                         Length 1251;
                                                                                                                                                  Indels
                                               --QPGQPGQMPGA 1022
                                                                                                                                                                                                                                                                                                                                     The invention
                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                           1000
                                                                                                                                                  24;
                                                                                                                                                                                                                                                                                                                                                                                                              cell-cell
                                                                                                                                               Gaps
                                                                                                                                                                                                                                       WIPO
                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                      is
                                                                                                                                                 5
```

time :

completed: October 27, 2002, ne : 21.4111 secs

11:09:11

4.

```
Qγ
  B
                                                          B
                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                             Best
                                                                                                                Matches
                                                                                                                                          Query Match
                                                                                                                                                                                         Recombinant or substantially pure preparations of H. pylori polypeptides are disclosed, together with the nucleic acids encoding them. In all, 97 ORFS are shown. The proteins are variously cell envelope proteins, cytoplasmic proteins, secreted proteins or other cellular proteins. Vaccines containing the nucleic acids or proteins are claimed, as are probes containing at least 8 nucleotides from the nucleic acid sequences. The vaccines are useful for treating or reducing the risk of H. pylori infections, and the probes can be used diagnostically for detecting the presence of Helicobacter in a sample. The products are also of use in screening for compounds having the ability to interfere with the H. pylori life cycle or to inhibit H. pylori infection.
                                                                                                                                                                                                                                                                                                                                                                                        New isolated Helicobacter pylori nucleic acids - used to develop products for the diagnosis, prevention and treatment of infection H. pylori and other Helicobacter species {\sf H}
                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                               Claims 37, 41; Page 190-191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1998-333051/29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alm RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ASTR ) ASTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-JUL-1997;
05-DEC-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W09824475-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Helicobacter pylori.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vaccine; probe; diagnostic; ORF; cell envelope protein; secreted protein; cytoplasmic protein; cellular protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY11028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY11028 standard; Protein; 116
                              61
  8
                                                        11
                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pylori ORF 01cp20708_10628177_c2_50 secreted protein
                          LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRY 116
                                                                                MRGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAV 60
                                                     MSGLRTFSCVVVLCGAMVNVAVAGPKIEARGELGKFVGGAVGNFVGDKMGGF---VGGAI
-GGYIGSEVGDRV--EDYIRGVDREPQNKEPQTPR
                                                                                                              31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAX30557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Castriotta
                                                                                                                                                                      116 AA;
                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0891928.
96US-0759625.
97US-0823745.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97WO-US22104
                                                                                                                           10.0%;
26.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ě
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Doig
                                                                                                              16;
                                                                                                           Score 83; DB Pred. No. 0.42
                                                                                                                                                                                                                                                                                                                                                            339pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kabok
                                                                                                                          0.42;
                                                                                                                                         DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                              51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Smith
                                                                                                                                      Length 116;
                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ū
EPIRDFYDY 108
                                                                                                             18;
                                                                                                          Gaps
                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                      γd
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic -
                                                                                                                                                            G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
::
      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB DB
                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
                                                                                                                                                                                                                      Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-677-374-5
768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        October 27, 2002, 15:09:08; Search time 1529.81 Seconds (without alignments) 6775.784 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13736207 segs, 6748477542 residues
                                                                                                                                                                                                                                                                                                                                  10:
11:
12:
13:
14:
15:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                              em_gss_hum: *
em_gss_inv: *
em_gss_pln: *
em_gss_vrt: *
                                                                                                                                                                                                                                                                                                                                                                                           gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                        em_estro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                em_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estba:*
                                                                                                                                                                                                                                                                                                                                                                              gb_gss:*
     112
112
112
110
110
110
110
110
110
            AU037653

ACNS00FCD

ACNS00FCD

ACNS0488

CNS04895

BG240789

BG240789

BG356895

BE355894

BF176742

BG0535894

BF1352290

BF586874

BG0533514

BG0533014

BG738844

BG738844

BG738844

BG738848
                                                                                                                                                                                                                        ij
                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27472414
AU037653 AU037653
AL070512 Drosophil
AZ799648 2M0057814
AL286627 Tetraodon
BG240789 OV1_38_CO
AQ260501 CITB1-E1-BG356895 OV2_11_D0
BE355894 DG1_11_E1
BF176742 EM1_4_F01
BG052290 RHIZ2_12_BF586874 FM1_31_EO
BG053591 RHIZ2_11_BG0533014 RHIZ2_11_BG0533014 RHIZ2_16_BG73858 EM1_20_CO
BF587805 FM1_40_GO
BG673858 EM1_20_CO
BE673858 EM1_20_CO
BE587663 DG1_12_B1
                                                                                                                                                                                                                      Description
```

O		o				c			ი				ი		ი											
4 4 4 5	. 43	42	41	40	39	38	37	36	ω 5	34	ω	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18
40.4		40.6	41		41.2		41.6	41.6		41.6		۲	۳		٢	۳	Ĺ	Ė	ù	41.8	42	42	42	42	42	42
ა	ω				5.4	5.4	5.4	5.4	5.4		5.4	5.4		5.4	5.4	5.4	5.4		5.4						5.5	
856	548	942	928	737	702	1201	1079	1058	958	878	742	671	597	556	509	459	361	321	474	238	649	620	600	598	597	591
12	10	12	12	10	10	12	10	10	12	10		9	10	10	12	10	9				10	10	10		10	10
AZ421257 AQ740253	вм328366	CNS018GS	CNS00DKY	BM166352	W27594	CNS0167M	BF792265	BM478067	CNS001FF	BM449796	BF792098	AW328753	BI492596	BE395015	AZ447316	BI493124	AA663164	AW021656	вм031893	AA352399	BE355895	BF481524	BE360868	AW672446	BG102589	BE356800
AC421257 IM0199M21 AQ740253 HS_5505_A			AL071865 Drosophil	BM166352 EST568875		AL106396 Drosophil	BF792265 602252768			BM449796 AGENCOURT	8	AW328753 EST00024	BI492596 df26e07.w	BE395015 601309414	AZ447316 1M0244E04	BI493124 df97h08.y	. AA663164 ac52h10.s	f26e07.	BM031893 497456 MA	AA352399 EST60642	٠.		8 DG1_67	G1_35	BG102589 RHIZ2_34_	DG1_12_

ALIGNMENTS

```
RESULT 1
AU037653
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
Query Match
Best Local Similarity
Matches 95; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AU037653 Dictyostelium discoldeum SS (H.Urushihara) Dictyostelium discoldeum SS (H.Urushihara) Dictyostelium discoldeum cDNA clone SSE138, mRNA sequence.
AU037653.1 GI:3984406
                                                                                                                                                                                                                                                                                                                                                            DNA Res.
99156227
                                                                                                                                                                                                                                                                                                                                                                                                            Morio,T., Urushihara,H., Saito,T., Ugawa,Y., Mizuno,H., Yoshida,M., Yoshino,R., Mitra,B.N., Pi,M., Sato,T., Takemoto,K., Yasukawa,H., Williams,J., Maeda,M., Takeuchi,I., Ochiai,H. and Tanaka,Y. The Dictyostelium developmental cDNA project: generation and analysis of expressed sequence tags from the first-finger stage of
                                                                                                                                                                                                                                                                  Contact: Hideko Urushihara
Institute of Biological Sciences
University of Tsukuba
3-3-10 Ten-nodai, Tsukuba, Ibaraki 305, Japan
Email: d402hu@sakura.cc.tsukuba.ac.jp
                                                                                                                                                                                                                                                                                                                                                                                               development
                                                                                                                                                                                                                                                     PROJECT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
1 (bases 1 to 551)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dictyostelium discoideum.
5.7%;
ilarity 52.5%;
Conservative
                                                                                         D
                                                                                                                                                                                                                                                                                                                                                                         5 (6), 335-340 (1998)
                                                                                     /clone_lib="Dictyostelium discoideum
/dev_stage="slug"
63 c 39 g 183 t
                                                                                                                                           /organism="Dictyostelium
/strain="AX4"
/db_xref="taxon:44689"
/clone="SSE138"
                                                                                                                                                                                                                        'Dictyostelium discoideum cDNA project in Japan'.
Location/Qualifiers
Score 43.4; D
Pred. No. 3;
0; Mismatches
                                                                                                                                                                                                 discoideum"
                                   DB
                           9;
   ; 88
                                   Length 551;
   Indels
                                                                                                                          SS (H.Urushihara)"
 0;
 Gaps
 0
```

```
ORIGIN
                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CNS00FCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                               Matches
                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                             104
85 AGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGATGGTACACAA 144
                                                                                                                      25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                152 CTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTATGTTGATAACACTAGCA 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154 ATTCAAATAATGTAATTGCAACTTTAATTTTACCAAAAATTGATGATAATAATAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Web: www.genoscope.cns.Ir)

Determination of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP). The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the 18 partial y2; on bw sp, the same strain used for the BDGP's pl and EST libraries. A more detailed description of the library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 CAAAATCACATATTTTTAAAAAAAGAAATTTTTAAATCAAATTGTACTTCATCAAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 TAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGATGGTACACAAGGACAAA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACAAATCAGCACAAACAACTCAATTACACCAATAATCAAAATTACTAACACATCTGAC 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAACACATCTGACAGTGATT
                                                                                                                                                                 83;
                                                                                                                                                                                                                                                                                                                                                                                                                               and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota;
Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CNSOOPCD 1100 bp DNA linear GSS 03-JUN-1999 Drosophila melanogaster genome survey sequence TET3 end of BAC: BACR31D18 of RPCI-98 library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL070512.1 GI:4950453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kkaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
-erygota; Neoptera; Endopterygota; Diptera; Brachycera;
uscomorpha; Ephydroidea; Drosophilidae; Drosophila.
(bases 1 to 1100)
                                                                                                                                                                                                                                                                         356
                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submission
                                                                                                                                                                                                                                                                /note="end : TET3"
100 c 111 g
                                                                                                                                                                                                                                                                                                           /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone_lib="RPCI-88"
/clone="BACR31D18"
                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            melanogaster
                                                                                                                                                                                 5.6%;
33.7%;
                                                                                                                                                          ,
6;
                                                                                                                                                                              Score 43;
Pred. No.
                                                                                                                                                        Mismatches 157;
                                                                                                                                                                                                                                                                  137 t
                                                                                                                                                                                              DB 12; Length 1100;
                                                                                                                                                                                                                                                                  396 others
                                                                                                                                                        Indels
                                                                                                                                                     0;
                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91
                                                                                                                                                     0
```

Qy Db QY

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
AZ799648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344 AAAKAT 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGASMGGAAAAANAAAGGGAANNNANNNAAAAAHAAYAAMANATAAAAAAAAAAAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCAACCTATGAT 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTATGTTGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 801 585 5606
Fax: 801 585 7177
Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error:
Plate: 0057 row: B column: 14
Seq primer: CGTTGTAAAACGACGGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence stop: 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dunn, D., Aoyagi, A., Barber, M., Beacorn, T., Duval, B., Hamil, C., Islam, H., Longacre, S., Mahmoud, M., Meenen, E., Pedersen, T., Reilly, M., Rose, M., Rose, R., Stokes, R., Tingey, A., von Niederhausern, A. and Wright, D., Weiss, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84112,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Robert B. University of Utah University of Utah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plasmid inserts
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mouse whole genome scaffolding with paired end reads from 10kb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammalia; Eutheria;
1 (bases 1 to 470)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AZ799648
470 bp DNA linear GSS 16-FEB-2002M0057B14F Mouse 10kb plasmid UUGC1M library Mus musculus genomic Clone UUGC2M0057B14 F, DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AZ799648.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plasmid ends
10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pWD42 (gil4732114|gb|AF129072.1), a copy-number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to
                                                                                                                                     was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with T4 DNA polymerase and T4 polynucleotide kinase. Adaptor oligonucleotides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to
                                                                                                                                                                                                                                                                                                      /lab_host="B: Coli strain XL10-Gold, T1-resistant, F-"/note="Vector: PW042nv; PurIfied genomic DNA from M. musculus C57BL/6J (male) was obtained from the Jackson Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                /organism="Mus musculus"
/strain="C57BL/6J"
/db_xref="taxon:10090"
/clone="UUGC2M0057B14"
/clone_lib="Mouse 10kb plasmid UUGClM library"
/sex="Male"
                                                                                                                                                                                                                                                                          (http://www.jax.org/resources/documents/dnares/).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Biomedical Polymers Research Bldg.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:12950975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Weiss
Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 16-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              নে
:
                                                                                                                                                                                                                                                                                 The DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SLC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ţ
```

1

```
RESULT 4
CNS04E5M/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
Query Match
Best Local Similarity
Matches 116; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122 ATTACACAAGTG 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTAGCTGTTTGTGTTACATCTAGTTTACCACCACAACCAAACTAAACCAAACCAAAAA 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTCATTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAAAACTCCAAATAACCCAAGCATAAACATAAATGACCATGAGCTCAATGTTGTATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (12-APR-2000) to the EMBL/GenBank/DDBJ dat
This sequence is a single read and was generated as
scale clone-end sequencing project of the Tetraodon
genome. For more information, please take a look at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 976)
Roest-Crollius, H., Jallon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottler, P., Quetler, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSS; genome survey sequence. Tetraodon nigroviridis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tetraodon nigroviridis genome survey sequence T7 103P02 of library G from Tetraodon nigroviridis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL286627.1 GI:8025084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CNS04E5M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Weissenbach,J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Roest-Crollius,H., Jaillon,O., Dasilva,C., Fizames,C., Bouneau,L., Billault,A., Quetier,F., Saurin,W., Bernot,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tetraodontidae;
                                                                                                                                                                                                                                                                                                                                                              http://www.genoscope.cns.fr/Tetraodon.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jaillon,O.,
(bases 1 to 976)

The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 976)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138
                                                                                                                                                                243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                     Conservative
                                                                                                                                                          /clone_lib="G"
/note="Genoscope
a 151 c 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      adaptored vector DNA, and transformed into chemically-competent E. coli X:10-Gold (Stratagene) cells and selected for ampicillin resistance."

97 c 132 g 103 t
                                                                                                                                                                                                                                           /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="103P02"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           428
                                       33.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.5%;
57.6%;
                     61;
               Score 42.2; D
Pred. No. 7.5;
61; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 42.4;
Pred. No. 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                             sequence
g 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             976 bp
                                          .
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                     DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                   ťΒ
                  168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56;
                                                                                                                                                             COBG103DH01LP1~end 118 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear GSS 21-MAY-2000
nce T7 end of clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bernot, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                      part of a large nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                  ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fisher, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                              T7"
                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
BG240789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WWWAAAAAAAKKTTTTTHWNWKKKKKKKKKKKKKRVGGGBKBBYTBTVBAGRGVGBASGGA 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTACACAA 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WATTATATAWTTTNTAAANAWAWWATAAATAAAATWTWAWAWWWTWATAATAAAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTCTACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCCAATAATCAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGAGGACGGAKAGCKYTCTBAGGGGGTGATTTCCACCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCAGAACTT 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCAACCTATGATACATATCTGGATCCGTCTCATATGCGTGGTTGCCTGCAGGGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAATTTTATTAAWTWTNNATTAAWAATAAATAAAWWAHWWAWANAAAAWAWAWAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAAAAATTWATTTNTTATTTAATWTTTAATAATAAAAAA - TAWWAWTTAWWTATNATW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum bicolor
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG240789
OV1_38_C06.g1_A002 Ovary
                                                                                                                                                                                                                                             High quality sequence POLYA=No.
                                                                                                                                                                                                                                                                                 High quality sequence
                                                                                                                                                                                                                                                                                                      Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                         Email: mmpratt@uga.edu
Sequences have been trimmed
below Phred quality 16. The
                                                                                                                                                                                                                                                                                                                                                                                                                                          The University of Georgia Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            An EST database from Sorghum: 
Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cordonnier-Pratt, M.-M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clade; Panicoideae; Andropogoneae;
1 (bases 1 to 238)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG240789.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG240789
                                                                                                                                                                                                                                                                                                                                                                                                      706 542 1860
706 542 1805
                       63
            /db_xref="taxon:4558"
/clone_lib="ovary 1 (OVI)"
/clone_lib="ovary 1 (OVI)"
/clone_lib="ovary 1 (OVI)"
/clone_lib="ovary 1 (OVI)"
/clone=Torgan: Mix of ovarries of varying immature stages
/note=Torgan: Mix of ovarries of varying immature stages
from 8 week-old plants; Vector: pBluescript II from Lambda
Zap II, Site_1: XhoI; Site_2: EcoRI; The library was made
from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
3 54 c 70 g 51 t
                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:12775862
                                                                                                                                                                                                                                                              stop:
                                                                                                                                                                                                                                                                                   start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gingle, A., Marsala, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             238 bp
1 (OV1)
                                                                                                                                                                                                                                                                                                                                                                                                                                              Rm.
                                                                                                                                                                                                                                                                                                                                            to exclude PolyA, vector and regions threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                            2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ovaries of varying immature stages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA linear
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                              Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                              GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 15-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190
```

Query Match Best Local Similarity

5.5%;

Score Pred.

42; No.

4.8 4.8

10;

Length 238;

Matches

72;

06-MAR-2001

```
CTAAAAATTCCATTCAGAAAAACTCATTTACAATAATATAGAAAAGAATTAAGCAAGTGG 185
                                                                                                                                        ACAGTGATTTAAATTTAAATGACGTAAAAGTTTAGATATTACACAAGTGATGGTACAC 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGACGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTCGTGTCGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCCAGAACTTCAGCCGCCAGGAAGTTGGGGGGCGGCCACCGGTGCGGTTGTGGGGCGGTGT 404
                                                                                                                                                                                         l Similarity
72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                   Seq primer: M13 Reverse
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        end search page:
http://www.tigr.org/tdb/humgen/bac_end_search/bac_end_search.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: mdadams@tigr.org
Clones are available from Research Genetics (info@resgen.com).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Mark Adams
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 301 838 0200 Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQ260501 273
CITBI-E1-2509D17.TR CITBI-E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adams, M.D., Rounsley, S.D., Zhao, S., Bass, S., Linher, K., Golden, K., Berry, K., Granger, D., Suh, E., Wible, C., Shizuya, H., Simon, M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Map Building
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Use of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Venter,J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AQ260501.1 GI:3787025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l (bases 1 to 273)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200
                                                                                                                                                                                                                                                                 113
                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a random human BAC End Sequence Database for
                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                   /cell_type="sperm"
/note="Vector: pBeloBAC11; Site_1: EcoRI; Site_2: EcoRI;
CalTech Human BAC Library D"
43 c 47 g 70 t
                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="2509D17"
/clone_lib="CITBI-E1"
                                                                                                                                                                                                                                                                                                                         /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                    59.0%;
                                                                                                                                                                                   Score 42; DB : Pred. No. 5.1; 0; Mismatches
                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp
Homo
                                                                                                                                                                                                                 DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                      50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20850,
                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear GSS
genomic clone
                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence-Ready
                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-OCT-1998
2509D17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                           245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                      ACCESSION
VERSION
                                                                                                                                                RESULT 8
BE355894
                                         SOURCE
                                                         KEYWORDS
                                                                                                                                                                                                              B
                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                 БР
                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                    Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
BG356895
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                         465
                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                           405 IGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                             345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGGGGGGGGCGGCGGCGGTGGGGGGTGT 404
                                                                                                                                                                                                            260 CC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
                                                                                                                                                                                                                                        TC 466
                                                                                                                                                                                                                                                                CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                         CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 199
                                                                    sequence.
BE355894
BE355894.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA 247
                                                        EST
                                                                                                            BE355894 419 k
DG1_11_E11.g1_A002 Dark Grown
Sorghum bicolor
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
                                         sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The University of Georgia Plant Sciences Building, I Tel: 706 542 1860 Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence start: High quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG356895
BG356895.1 GI:13238881
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An EST database from Sorghum: ovaries of varying immature stages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG356895
OV2_11_D01.g1_A002 Ovary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Sorghum bicolor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:4558"
                                                                                                                                                                                                                                                                                                                                                                                                        5.5%;
                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                      Score 42; DB Pred. No. 5.9; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   402 bp
, 2 (ov2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ¥
                                                                                                                            ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; 47
391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2502, Athens, GA
                                                                                                              mRNA linear EST 20-0 (DG1) Sorghum bicolor cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                     DB 10; Length 402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA linear
Sorghum bicolor o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                        50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA, mRNA
                                                                                                                           EST 20-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
```

Qγ Db Qy DЪ

143

AA 144

BASE COUNT ORIGIN

FEATURES

source

Gaps

0;

259

mRNA

COMMENT

TITLE JOURNAL

SOURCE ORGANISM VERSION KEYWORDS

ACCESSION DEFINITION FOCUS

REFERENCE

AUTHORS

RESULT 6 AQ260501

밁 Qy В δõ В QΥ

199

င္ပ

465 TC

139 405

79

ρy

23

126 83

Matches Query Match

rocal

٦

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
COMMENT
                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
BF176742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           405 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCCGCCACCGGTGCGGTTGTGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           198 CC 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465 TC 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCGAGAAGCTGACCGACTAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                          Reid S.P., Cordonnier-Pratt,M.-M.,
An EST database from Sorghum: devel
Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                        sorghum.
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence.
BF176742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Department of Botany
The University of Georgia
Plant Sciences Building, Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (2000)
Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoldeae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EM1_4_F01.g1_A002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BF176742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An EST database from Sorghum: dark-grown seedlings
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cordonnier-Pratt, M.-M., Gingle, A., Marsala, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clade; Panicoideae; Andropogoneae; 1 (bases 1 to 419)
The University of Georgia
Plant Sciences Building, Rm.
Tel: 706 542 1805
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                       BF176742.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POLYA-No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                    Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                 (bases 1 to 428)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           quality sequence start: 16 quality sequence stop: 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Sorghum bicolor"
/db_xref="taxon:4558"
/db_xref="taxon:4558"
/clone_lib="Dark Grown 1 (DG1)"
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector:
/note="Organ: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Vector: 5-day-old dark-grown seedlings; Ve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. .419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              428 bp
1 (EM1)
                                                   2502, Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2502, Athens,
                                                                                                                                                                                .-M., Gingle,A. and developing embryos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bicolor cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GA 30602-7271, USA
                                                   GA 30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sudman, M. and Pratt
                                                                                                                                                                                                           Pratt, L.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
BG052290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S<sub>A</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178 CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465 TC 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence.
BG052290
                                                                                                                                                                                                                                                                                                                Tel:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           103
```

```
Query Match
Best Local Similarity
"-+~hes 72; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        405 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCGCCACCGGTGCGGTTGTGGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGGATGATCCGTGAGGCTGACGTCGATGG 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                             Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                              The University of Georgia Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                               Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         clade; Panicoideae; Andropogoneae;
1 (bases 1 to 446)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sorghum propinquum.
Sorghum propinquum
Eukaryota; Viridipl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG052290.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG052290 446 k
RHIZ2_12_G04.g1_A003 Rhizome2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                               Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                          An EST database from Sorghum:
                                                                                                                                                  quality sequence quality sequence
                                                                                                                                                                                                                                       706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Sorghum bicolor"
/db_xref="taxon:4558"
/clone_lib="Embryo 1 (EM1)"
/clone_lib="Embryo 1 (EM1)"
/note="Organ: Embryos germinated for 24 hr; Vector:
/note="Organ: Embryos germinated for 24 hr; Vector:
/note="Organ: Embryos germinated for 24 hr; Vector:
/note="Organ: Embryos germinated for 24 hr; Vector:
ECORI; The library was made from poly-A RNA in the record; The library was made from poly-A RNA in the vector lambda ZAP II. Clones to be sequenced were prepared by mass excision."
/organism="Sorghum propinquum"
/db_xref="taxon:132711"
/clone_1ib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizomes; Vector
                                                                                     Location/Qualifiers
1. .446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:12506830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.5%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     start: 32
                                                                                                                                                  start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; DB
Pred. No. 6.1;
                                                                                                                                                                                                                                                                                    RIII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   446 bp
                                                                                                                                                                                                                                                                                  2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (RHIZ2) Sorghum propinguum
                                                                                                                                                                                                                                                                                                                                                                                          Sorghum propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                                    Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≡RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                    GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                              rhizomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 25-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA,
                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Site_
                                                                                                                                                                                                                                                                                                                                                                                                                                         and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

Vector: pBluescript II from Lambda

```
ORIGIN
                                           BASE COUNT
                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
BF586874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171 CC 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTGGGCGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TC 466
                                                                                                                                                                                                                                                                                                   High quality sequence start: 8 High quality sequence stop: 495 POLYA=NO.
                                                                                                                                                                                                                                                                                                                                                                  Email: mmpratt@uga.edu
Sequences have been trimmed to exclude PolyA, vector and regions
below Phred quality 16. The threshold for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGGATGATCCGTGAGGCTGACGTCGATGG 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGGCGACCGGTGCGGTTGTGGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                                        Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                         repartment of Botany
The University of Georgia
Plant Sciences Building, Rm. 2502,
Tel: 706 542 1860
Fax: 706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum propinquum Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cordonnier-Pratt, M.-M., Gingle, A., Sudman, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        An EST database from Sorghum: floral-induced meristems
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sorghum propinguum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF586874.1 GI:11679198
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE586874 500 bp mRNA FM1_31_E06.gl_A003 Floral-Induced Meristem propinguum cDNA, mRNA sequence.
                                         111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 59.(
72; Conservative
                                    /Clone_lib="ploral-Induced Meristem 1 (FM1)"
/Clone_lib="ploral-Induced meristems; Vector:
pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
ECORI; mature plants were placed in a growth chamber for
15 days with 16 h darkness and 8 hr light (flowering is
induced by short-day conditions); 16 days after being
returned to the greenhouse under natural long days during
late April/early May, meristems were harvested The
library was made from poly-A RNA in the cloning vector
mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                   /organism="Sorghum propinguum"
/db_xref="taxon:132711"
                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              വ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zap II; Site_1: xhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II. Clones to be sequenced were prepared by mass excision."

81 c 124 g 140 t
                              excision."
94 c 141 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.5%;
59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 42; E
Pred. No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                154 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Athens, GA 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear EST 12.
1 (FM1) Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Marsala,C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 12-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
            Qγ
                                           Ъ
                                                                         Qy
                                                                                                             DЬ
                                                                                                                                          δÃ
                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
```

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1:
BG053591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
""+"hes 72; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
174 CC
                           465 TC
                                                     114
                                                                                 405
                                                                                                          345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGGGGGGCGCCACCGGTGCGGTTGTGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              465 TC 466
                                    CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT 173
                                                     TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGT
                                                                                        CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405 TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTGGATGGCCATCGGCGGTGCGGT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGGCGACCGGCCACCGGTGCGGTTGTGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89 CGGCGAGAAGCTGACCGACGAGGGGCGACGACGACGATGATCCGTGAGGCTGACGTCGATGG 148
                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Botany
The University of Georgia
Plant Sciences Building, R
Tel: 706 542 1860
Fax: 706 542 1805
 175
                           466
                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: High quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                     Email: mmpratt@uga.edu
Seq primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        An EST database from Sorghum:
Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                             POLYA-Yes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum propinquum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cordonnier-Pratt,M.-M., Gingle,A., Paterson,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG053591 507 L
RHIZ2_11_C03.g1_A003 Rhizome2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sorghum propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG053591.1
                                                                                                                                                                                                                              109 a
                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                 /organism="Sorghum propinguum"
/db_xref="taxon:132711"
/clone_llb="Rhizome2 (RHIZ2)"
/note="Organ: Rhizome2; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
Clones to be sequenced were prepared by mass excision."
a 92 c 142 g 164 t
                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                    5.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:12509440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Georgia
                                                                                                                                                         0;
                                                                                                                                                                   Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 42; [
Pred. No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                      507
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sorghum propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (RHIZ2) Sorghum propinquum
                                                                                                                                                                                 DB
                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Athens, GA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10; Length 500;
5.5;
                                                                                                                                                   50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                          Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                           30602-7271, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rhizomes
                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 25-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                           Gaps
                                                                464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

밁

```
RESULT 14
BG713844
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
BG053014
LOCUS
                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                   SOURCE
ORGANISM
                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                  181 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                    405 TGCCGGCCAGCTGTTCGGTAAAAGGCTCTGGTCGTCGTGTGTCGATGGCCATCGGCGGTGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                     345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTGTGTGGGGCGGTGT 404
                                                                                                                                                                                                                                                   241 CC
                                                                                                                                                                                                                                                                                    465 TC 466
                                                                                                                                                                                                                                                                                                                                                                                  121 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGACGATGATCCGTGAGGCTGACGTCGATGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                sequence.
BG713844
BG713844.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sorghum propinguum Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
                                                                                                                                          BG713844
EM1_20_C08.g2_A002 Embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Department of Botany
The University of Georgia
Plant Sciences Building,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clade; Panicoideae; Andropogoneae; Sorghum.
l (bases 1 to 531)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence.
BG053014
                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Cordonnier-Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A., Sudman, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sorghum propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG053014.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RHIZ2_16_D04.g1_A003 Rhizome2
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Sorghum.
                                                 sorghum.
Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     High quality sequence stop: POLYA=NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: mmpratt@uga.edu
Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2000)
                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  quality sequence start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Sorghum propinquum"
/db_xref="taxon:132711"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizomes; Vector: pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2: EcoRI; The library was made from poly-A RNA in the cloning vector lambda Zap II.
Clones to be sequenced were prepared by mass excision."
a 101 c 152 g 154 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:12508270
                                                                                                   GI:14007794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 42; DB Pred. No. 6.6;
                                                                                                                                                 537 bp
o 1 (EM1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2502,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sorghum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 p mRNA linear EST 25-JAN (RHIZ2) Sorghum propinguum cDNA,
                                                                                                                                                 Sorghum bicolor cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Athens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   propinguum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30602-7271,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rhizomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 25-JAN-2001
                                                                                                                                                                  EST 08-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and Pratt
                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
BF587805
                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                           Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Sin
Matches 72;
                                                                                                                         TITLE
                                                                                                        JOURNAL
                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152 CGACGGCCAGATCAACTATGAAGAGTTTGTTAAGGTTATGATGGCCAAGTGAGGAGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGCGGTGT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATCGCCATCGGCGGTGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGGATGATCCGTGAGGCTGACGTCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 537)
Reid, S.P., Cordonnier-Pratt, M.-M., Gingle, A. and
An EST database from Sorghum: developing embryos
Uppublished (2000)
                                                                                                                                                                                                                                                                                                                            561 bp FM1_40_G05.g1_A003 Floral-Induced propinguum cDNA, mRNA sequence BF587805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: mmpratt@uga.edu
Sequences have been trimmed to exclude below Phred quality 16. The threshold i
                               The University of Georgia Plant Sciences Building,
                                                                   Unpublished (2000)
Contact: Cordonnier-Pratt MM
Department of Botany
                                                                                                                                                            Cordonnier-Pratt, M.-M.,
                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoldeae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                Sorghum propinguum
                                                                                                                                                                                                                                                                                     EST
                                                                                                                                                                                                                                                                                                      BF587805.1 GI:11680115
                                                                                                                                                                                                                                                                                                                       propinguum
BF587805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence 
High quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The University of Georgia Plant Sciences Building, Rm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Botany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Cordonnier-Pratt MM
                                                                                                                       An EST database from Sorghum:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                           (bases 1 to 561)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       706 542 1860
706 542 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /Clone_lib="Embryo 1 (EM1)"
/note="Organ: Embryos germinated for 24 hr; Vector:
/note="Organ: Embryos germinated for 24 hr; Vector:
pBluescript II from Lambda Zap II; Site_1: xhoI; Site_2:
EcoRI; The library was made from poly-A RNA in the cloning
vector lambda Zap II. Clones to be sequenced were
prepared by mass excision."
a 98 c 152 g 169 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Sorghum bicolor"
/db_xref="taxon:4558"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            start:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42; DB 10;
Pred. No. 6.6;
                                                                                                                                                        Gingle, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                   RA
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2502, Athens,
                                   2502,
                                                                                                                           floral-induced
                                                                                                                                                                                                                                                                                                                                                            Meristem
                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                 Athens,
                                                                                                                                                          Sudman, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PolyA, vector and regions for highest quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 537
                                                                                                                                                                                                                                                                                                                                                        linear
1 (FM1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GA 30602-7271,
                                   GA
                                                                                                                           meristems
                                 30602-7271,
                                                                                                                                                                                                                                                                                                                                                                             EST 12-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Search completed: October 27, 2002, 18:34:59 Job time: 1533.81 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 5.5%; Score 42; DB 10; Length 561; Best Local Similarity 59.0%; Pred. No. 6.8; Matches 72; Conservative 0; Mismatches 50; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                               322 CC 323
                                                                                                                                                                                                            345 CGCCCAGAACTTCAGCCGCCAGGAAGTTGGGCGGGCACCGGTGCGGTTGTGGGCGGTGT 404
                                                                                                                                                                      465 TC 466
                                                                                                                                                                                                                                                                                                                        202 CGGCGAGAAGCTGACCGACGAGGAGGTCGACGAGATGATCCGTGAGGCTGACGTCGATGG 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequences have been trimmed to exclude PolyA, vector and regions below Phred quality 16. The threshold for highest quality sequence is 20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence start: 81 High quality sequence stop: 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: PolyTMix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="Floral Induced Meristem 1 (FM1)"
/note="organ: Floral Induced meristems; Vector:
/note="organ: Floral Induced meristems; Vector:
/pBluescript II from Lambda Zap II; Site_1: XhoI; Site_2:
EcoRI; mature plants were placed in a growth chamber for
15 days with 16 hr darkness and 8 hr light (flowering is
induced by short-day conditions); 16 days after being
returned to the greenhouse under natural long days during
late April/early May, meristems were harvested The
library was made from poly-A RNA in the cloning vector
lambda ZAP II. Clones to be sequenced were prepared by
mass excision."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Sorghum propinguum"
/db_xref="taxon:132711"
                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

밁 δÃ Ъ δÃ DЪ 80

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
          Pred.
score
and is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB seq
                                                                                                          Score
         39999
                                                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                                           No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                   Issued_Patents_NA:*
1: /cgn2_6/ptodata/2/
2: /cgn2_6/ptodata/2/
3: /cgn2_6/ptodata/2/
4: /cgn2_6/ptodata/2/
5: /cgn2_6/ptodata/2/
6: /cgn2_6/ptodata/2/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 October 27, 2002, 16:06:08; Search time 56.152 Seconds (without alignments) 3359.570 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-677-374-5
768
                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            383533 seqs, 122816752 residues
                 atgtcagttgaattctacaa...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compus
                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                             DB
               US-08-048-164A-1
US-08-460-462-1
US-08-460-452-3
US-08-460-452-3
US-08-460-458-3
US-08-460-458-3
US-08-460-455-3
US-08-460-455-3
US-08-460-455-3
US-08-460-455-3
US-08-30-394A-3
US-08-30-394A-3
US-09-06-636-5
US-09-198-956-9
US-09-198-958-11
US-09-198-958-11
US-09-198-958-11
US-09-371-913A-1
US-08-471-033-6
US-08-471-044-6
US-08-471-044-6
US-08-471-048-6
US-08-469-334-6
                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         767066
                                                                                                                                                                                                                                                                                          Description
                                                                                                                                      Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                              Sequence
Sequence
Sequence
                                                                                                                                                                                                           Sequence
Sequence
Sequence
                                             Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
       Sequence
Sequence
                          Sequence
Sequence
                                                                                                                   Sequence
Sequence
                                                                                                                                                                                                                                                                     Sequence
      1, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
1, Appli
1, Appli
1, Appli
3, Appli
5, Appli
5, Appli
5, Appli
5, Appli
5, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
6, Appli
                                              ; NAME/KEY:
; LOCATION:
US-08-048-164A-1
Query Match
Best Local Similarity
Matches 272; Conserv
                                                                            FEATURE:
```

```
US-08-471-044-4
US-08-463-483A-4
US-08-471-046A-4
US-08-471-046A-4
US-08-471-033-22
US-08-471-044-22
US-08-471-046A-22
US-08-471-046A-22
US-08-471-033-21
US-08-471-046A-21
US-08-471-046A-1
US-08-471-033-1
US-08-471-033-1
US-08-471-033-1
US-08-471-033-1
US-08-471-033-1
ALIGNMENTS
                                                                                                         -033-4
                   sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
               Sequence
               4, Appli
4, Appli
4, Appli
4, Appli
4, Appli
4, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
22, Appli
21, Appli
```

RESULT 1 US-08-048-164A-1 ; Sequence 1, Application US/08048164A ; Patent No. 5496334 ; GENERAL INFORMATION: TELEFAX: (212) 869-8864 TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO: 1 SEQUENCE CHARACTERISTICS: LENGTH: 486 base pairs TYPE: nucleic acid STRANDEDNESS: double TOPOLOGY: unknown COMPUTER: IBM PC COMPATIBLE COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Ve CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/048,164A FILING DATE: 14-APR-1993 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION: NAME: Misrock, S. Leslie REGISTRATION NUMBER: 18,872 REFERENCE/DOCKET NUMBER: 7809-003 TELECOMMUNICATION INFORMATION: TELEPHONE: (212),790-9090 TITLE OF INVENTION: CELLULOSE NUMBER OF SEQUENCES: 21 CORRESPONDENCE ADDRESS: ADDRESSEE: PENNIE & EDMONDS STREET: 1155 Avenue of the F COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk APPLICANT: Shpiegl, It APPLICANT: Goldstein, APPLICANT: Doi, Roy H. MOLECULE TYPE: DNA STREET: 1155 AVEI CITY: New York STATE: New York COUNTRY: U.S.A. ZIP: 10036 (212) 790-9090 (212) 869-8864/9741 Shoseyov, Ode Shpiegl, Itai 0ded Marc A. US/08/048,164A <u>..</u> Americas BINDING Version DOMAIN

Conservative

0

Score 270.2; DB 1 Pred. No. 3.8e-73; 0; Mismatches 3

DB 1;

Length 486; Indels

0;

Gaps

٠,٥

35.2**%**; 98.9**%**;

C O C

a a

```
밁
                                  γ
                                                                                                          US-08-048-164A-3
                                                Query Match
Best Local Similarity
Matches 272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 2
US-08-048-164A-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/048,164A
FILING DATE: 14-APR-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. LESILE
NAME: MISTOCK, S. LESILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3, Application US/08048164A Patent No. 5496934
                                                                                                                                                                                           TELEFAX: (212) 869-880
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                  STRANDEDNESS:
TOPOLOGY: unk
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
          471
                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                                                                                                                                        REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 780
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Shoseyov, Oded
APPLICANT: Shpiegl, Itai
APPLICANT: Goldstein, Marc A.
APPLICANT: Dol, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 1155 Avenue of the Americas CITY: New York
COUNTRY: New York
COUNTRY: U.S.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: DO1, ROY H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTACACATGCTGGTGCATTA 180
                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRY: U.S.A.
                                                                                                                                            nucleic acid
EDNESS: double
                                                       Conservative
                                                                                                                                                                                                                    (212) 869-8864/9741
                                                                                                                                unknown
                                                                                                                                                                                                                                 (212)
                                                                 35.2%;
                                                                                                                                                                                                                                  790-9090
                                                                                                                                                                                                                                                                                                                             US/08/048,164A
                                                                                                                                                                                            ω
•••
                                                Score 270.2; DB 1;
Pred. No. 3.8e-73;
Niamatches 3;
                                                       0;
                                                                                                                                                                                                                                                         7809-003
                                                                                                                                                                                                                                                                                                                                                      Version #1.25
                                                                          Length 486;
                                                   Indels
                                                   0;
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75
                                                0;
```

```
; NAME/KEY:
; LOCATION:
US-08-460-462-1
                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,462
FILING DATE: concurrently herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Mistock, S. Leslie
REGISTRATION NUMBER: 7809-006
TELECOMMUNICATION INFORMATION:
"BTI-ENDEC/DOCKET NUMBER: 7809-006
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-460-462-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                          Query Match
Best Local
              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/08460462
Patent No. 5670623
                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                   FEATURE:
                                                                                                                                MOLECULE TYPE:
Local 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: METHODS OF USE OF CELLULOSE BINDING DOMAIN PROTEINS NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Golds
APPLICANT: Doi,
                                                                                                                                             TOPOLOGY:
                                                                                                                                                            LENGTH: 480 L...
TYPE: nucleic acid
doub
                                                                                                                                                                                                                                  TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
TELEX: 66141 PENNIE
                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: New York
STATE: New Yor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: PENNIE & EDMONDS
STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAAATTACTAACACATCTGACAGTGATTTAAATTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
         Conservative
                                                                                  CDS
1..486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov, Oded
Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                              unknown
                                                                                                                                DNA
                                                                                                                                                           double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Roy Н
                       35.2%;
98.9%;
                                                                                                                                                                                                                    <u>.</u>
       0;
    Score 270.2; DB 1
Pred. No. 3.8e-73;
0; Mismatches 3
                                  ţ.
                                 Length 486;
    Indels
   0;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
   0;
```

ρy

Db

16

75

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
US-08-460-462-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                 ; MOLECULE TYPE: US-08-460-462-3
                                                     Query Match
                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08460462 Patent No. 5670623
                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/460,462
FILING DATE: concurrently herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                               REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 7809
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
TELEX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . MEDIUM TYPE: Floppy disk
COMPOTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Goldstein, APPLICANT: Doi, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGCACCATGCTGCTGCATTA 180
                                                                                                                                                              LENGTH: 486 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
GCAAGCCCAACATCAACCTATGATACATATGTTGA 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: PENNIE & EDMONDS
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov, Oded Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Goldstein, Marc A.
                                                 Conservative
                                                                 35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METHODS OF
                                                                                                                                                                                                                                                                                                                              18,872
                                            Score 270.2; DB 1;
Pred. No. 3.8e-73;
                                                                                                                                                                                                                                                                                                                   7809-006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF CELLULOSE BINDING DOMAIN PROTEINS
                                                                               Length 486;
                                                Indels
                                                0;
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                0;
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-08-460-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
;
US-08-460-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                    TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 78 TELECOMMUNICATION INFORMATION:
                                            FEATURE:
                                                            MOLECULE TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Doi, ROY H. TITLE OF INVENTION: CELLULOSE BINDING DOMAIN FUSION PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/460,457 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1155 A CITY: New York
                              NAME/KEY:
                                                                                      STRANDEDNESS:
                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                      ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Application US/08460457 5719044
                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1155 Avenue of the Americas
                                                                                                                      486 base pairs
                                                                                                                                                                                    (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shoseyov,
              1..486
                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PENNIE & EDMONDS
                                                                                                                                                                                                 (212)
                                                                                          double
                                                                                                                                                                                                    790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oded
                                                                                                                                                                                                                                       18,872
                                                                                                                                                                                                                                7809-008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           352
```

Query Match Best Local Similarity

35.2**%**; 98.9**%**;

Score 270.2; Pred. No. 3.8 0; Mismatches

; DB 1; .8e-73;

Length 486; Indels (

0

Gaps

0

Matches 272;

Conservative

Š

```
i oy
                                                                                                                                                                                                 ; MOLECULE TYPE: US-08-460-457-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-460-457-3/c
                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                               Matches 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 7809-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/08460457 Patent No. 5719044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBERS ASSOCIATION OF THE PROPERTY APPLICATION NUMBERS ASSOCIATION NUMBERS 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Shoseyov, Oded
APPLICANT: Shpiegl, Itai
APPLICANT: Goldstein, Marc A.
APPLICANT: Hoi, Marc A.
APPLICANT: Ooi, Roy H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN FUSION PROTEINS
NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy (
COMPUTER: IBM PC com)
                                                                                                                                                                                                                                                                                                                                                                                                      TELLETAX: (21 FELEFAX: 66141 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE & J
                                                                                                                                                                                                                                                  STRANDEDNESS:
TOPOLOGY: un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/460,457 FILING DATE: concurrently herewith CLASSIFICATION: 435
STREET: 1155 A
CITY: New York
STATE: New Yor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256 GCAAGCCCAACATCAACCTATGATACATATGTTGA 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New York
Y: U.S.A.
                                                                                                                                                                                                                                                                                                                               486 base pairs
                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2: PENNIE & EDMONDS
1155 Avenue of the Americas
                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                          DNA
                                                                                                                                                                                                                                                                                                                                                                                                                               PENNIE
                                                                                                                                                                                                                                                                              double
                                                                                                     35.2%;
98.9%;
                                                          Score 270.2; DB 1;
Pred. No. 3.8e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7809-008
                                                                                                                    Length
                                                                Indels
                                                                                                                    486;
                                                             0;
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                          0;
```

```
δÃ
                                                                                        US-08-460-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
US-08-460-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                           Matches 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08460458 Patent No. 5738984 GENERAL INFORMATION:
                                                                                                                                                                                                    TELEFAX: (212) 869-8864/9741
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-TOSS/MS-DOS
SOFTWARE: Patentin Release #1.0, Vers
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,458
FILING DATE: concurrently herewith
CLASSIFICATION: 435
                                                                                                                         TOPOLOGY: un MOLECULE TYPE: FEATURE:
                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Shoseyov, Oded
TITLE OF INVENTION: KITS AND METHODS OF DETECTION USING CELLULOSE BINDING
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
                                                                                                  NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: PENN
STREET: 1155 Av
CITY: New York
STRANDEDNESS:
                                                                                                                                                                                                                                       TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: UZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleic acid
EDNESS: double
                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: PENNIE & EDMONDS
                                                                                                             CDS
                                                                                                                                              unknown
                                                                                                 1..486
                                                                                                                                                                                                                                                                                                                                                                                                                                                             U.S.A.
                                                                                                                                                                                                                                        (212)
                                                   35.2%;
                                                                                                                                                                                                                                         790-9090
                                        0;
                                                                                                                                                                                                                                                              7809-007
                                                   Score 270.2;
Pred. No. 3.
                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                       Version #1
                                 3.8e-73;
3;
                                                                                                                                                                                                                                                                                                                                                                                       . 25
                                                           Length
                                      Indels
                                                            486;
                                    0;
                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             412
                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAI
```

```
RESULT 8
US-08-460-458-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
              S
                                           В
                                                                    S
                                                                                                                                                           ; TOPOLOGY: ur
; MOLECULE TYPE:
US-08-460-458-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                      Query Match
Best Local Similarity 98.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3, Application US/08460458 Patent No. 5738984
                                                                                                                                                                                                                                                           TELEPHONE: (212) 790-S
TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 01
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
ANAME AND A STORMATION:
                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 7809
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9909
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Shoseyo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                            471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76
                61
                                                                                                                                                                                                  LENGTH: 486 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/460,458 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                         ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCAAAATTACTAACACATCTGACAGTGATTTAAAATTTAAATGACGTAAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGCCCAACATCAACCTATGATACATATGTTGA 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                              Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shoseyov,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0,
                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Oded
KITS AND METHODS
                                                                                                                35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                         US 08/048,164
                                                                                                                                                                                                                                                                                                                                            18,872
                                                                                                                                                                                                                                                              <u>ω</u>
                                                                                                 Score 270.2; DB 1;
Pred. No. 3.8e-73;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                    7809-007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF DETECTION USING CELLULOSE BINDING
                                                                                                  Indels
                                                                                                                             Length 486;
                                                                                                  0;
                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75
                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                         δÃ
              B
```

Matches

Similarity

Conservative

Indels

0

Gaps

0

16

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-460-455-1
                                                                           US-08-460-455-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08460455 Patent No. 5837814
                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Shoseyov, Oded
APPLICANT: Shpiegl, Ital
APPLICANT: Goldstein, Marc
APPLICANT: Doi, Roy H.
TITLE OF INVENTION: CELLULO
                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Rel CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 2. CORRESPONDENCE ADDRESS:
                                                                                                                         MOLECULE TYPE: FEATURE:
Local 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
                                                                                                                                                                                                                                       TELEFAX: (212,
TELEFAX: 66141 PENNIE
TELETAX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
STATE: New York
COUNTRY: U.S.A.
                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                      NAME: Misrock, S. Leslie REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/460,455 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                           NAME/KEY:
                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                          LOCATION:
                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10036
                                                                                                                                                                                     nucleic acid
                                                                                                                                                                                                    486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MATION OUGE
Shoseyov, Ouge
Thriedl, Ital
                                                                                                                                                                                                                                                                      : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Release #1.0,
                                                                                                                                                          unknown
                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                        double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CELLULOSE BINDING DOMAIN PROTEINS: 21
                         35.2%;
                                                                                                                                                                                                                                                                                                                                  18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P
                                                                                                                                                                                                                                                                                                                      7809-009
          Score 270.2; DB 2
Pred. No. 3.8e-73;
D; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Version #1.25
                                          DB 2;
                                        Length
                                           486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292
```

```
Qy
                               Db
                                                      ρy
                                                                                                                                  US-08-460-455-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
US-08-460-455-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                Matches
                                                                                                        Query Match
                                                                                             Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/08460455
Patent No. 5837814
                                                                                                                                                                                                                  TELEPHONE: (212) 790-5
TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Rel.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE: concurren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                    FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: DOI, ROY H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN PROTEINS NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
61 ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
CITY: N
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity es 272; Conserv
                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256
                                                                                                                                                                                                                                                                                                            NAME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGCCCAACATCAACCTATGATACATATGTTGA 290
                                                                                                                                                                                                                                                                                                        Misrock, S. Leslie
                                                                                                                                                                               nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov, Oded Shpiegl, Itai
                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goldstein, Marc A.
                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                               concurrently herewith
                                                                                                                                                                    double
                                                                                                                                                                                                                                          869-8864/9741
                                                                                        35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0, Version #1
                                                                                                                                                                                                                                                                                                                                                                                            US/08/460,455
                                                                                                                                                                                                                     ω
                                                                           Score 270.2; DB 2;
Pred. No. 3.8e-73;
0; Mismatches 3;
                                                                                                                                                                                                                                                                               7809-009
                                                                                                  Length
                                                                         Indels
                                                                                                  486;
                                                                         0;
                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                         0;
```

```
Ър
                                  QΥ
                                                                                                                   ; NAME/KEY:
; LOCATION:
US-08-330-394A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-330-394A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 1, Applic
; Patent No. 5856201
                                                              Matches
                                                                                                                                                                                                                                             TELEFAX: (212) 869-886
TELEX: 66441 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/330,394A
FILING DATE: 27-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP OF PCT/US94/04132
FILING DATE: 14-APR-1994
                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: LLL STREET: NEW YORK CTATE: NEW YORK
                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION: NAME: MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Shpieg1, Ital
APPLICANT: Goldstein, Marc A.
APPLICANT: Doi, Roy H.
TITLE OF INVENTION: METHODS OF
TITLE OF INVENTION: CELLULOSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 3
Local Similarity 98.9 es 272; Conservative
                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     291
                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 411
                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                  nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08330394A
                                                                                                                                                                                                                                486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                         unknown
                                                                                                                                 1..486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yosef, Karmey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                      double
                                                                        35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METHODS OF
CELLULOSE E
                                                           0;
                                                                                                                                                                                                                                                                                                                                7809-005
                                                                       Score 270.2; DB 2
Pred. No. 3.8e-73;
                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F DETECTION USING THE BINDING DOMAIN
                                                                                    DB 2;
                                                         Indels
                                                                                   Length 486;
                                                        0;
                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352
                                                        0
```

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
US-08-330-394A-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   무
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
믕
                                                                                                                    US-08-330-394A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/08330394A Patent No. 5856201 GENERAL INFORMATION:
                                                          Matches
                                                                                      Query Match
                                                                                                                                                                                                                       TELEX: 66441 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/330,394A
FILING DATE: 27-CCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP OF PCT/US9-
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
NAME: MISROCK, S. LESLIE
                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC.DOS/MS-DOS
SOFTWARE: Patentin Rclease #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1155 AVEN
CITY: NEW YORK
STATE: NEW YORK
COUNTRY: U.S.A.
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: METHODS OF DETECTION USING THE TITLE OF INVENTION: CELLULOSE BINDING DOMAIN NUMBER OF SEQUENCES: 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                  TOPOLOGY: u
                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
 471
                                                                                                                                                                                                                          TELEFAX: (214, TELEFAX: 66441 PENNIE
                                                          Local Sinhes 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                               NAME: MISROCK, S. LESLIE REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
               GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov, Oded
Yosef, Karmey
                                                           Conservative
                                                                                                                                                                                                                                                                  (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                              double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Roy H
                                                                                                                                                                                                                                                    869-8864
                                                                      35.2%;
                                                                                                                                                                                                                                                                                                                                                         CIP OF PCT/US94/04132
                                                        Score 270.2; DB 2;
Pred. No. 3.8e-73;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Version #1.30
                                                                                      DB 2;
                                                                                    Length 486;
                                                          0
                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                          0;
```

```
Š
                                 В
                                                              δÃ
                                                                                                   Вb
                                                                                                                                δõ
                                                                                                                                                                                                                                    ; MOLECULE T
US-09-006-636-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-006-636-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/09006636 Patent No. 6005092 GENERAL INFORMATION:
                                                                                                                                                                                   Best
                                                                                                                                                                 Matches
                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                   TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Shoseyov, Oded
APPLICANT: Shani, Ziv
TITLE OF INVENTION: ARABIDOPSIS THAI
TITLE OF INVENTION: GLUCANASE GENE,
NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 291
 121 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM CONTROL OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Pennie & Edmonds LLF
STREET: 1155 Avenue of the Americas
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                 81
                                                                  61
                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                   STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Baldwin, Geraldine F REGISTRATION NUMBER: 31,23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGCCCAACATCAACCTATGATACATATGTTGA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                  ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATTGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 352
                                  ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 140
                                                                                                                                                                 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10036-2711
                                                                                                                                                                                                                                                                                   nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                  499 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBM Compatible
                                                                                                                                                                               35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARABIDOPSIS THALIANA ENDO-1,4-BETA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us/09/006,636
                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                          7809-019
                                                                                                                                                                                 Score 270.2; DB 3
Pred. No. 3.9e-73;
                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROMOTER AND
                                                                                                                                                                   ω
                                                                                                                                                                                                   ω
--
                                                                                                                                                                                                   Length 499;
                                                                                                                                                                   Indels
                                                                                                                                                                   0
                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  292
                                                                                                                                                                   0,
```

```
. QY
                                 Дb
                                                       Q
                                                                                   В
                                                                                                         Qy
                                                                                                                                      DЪ
                                                                                                                                                               Š
                                                                                                                                                                                                                                              ; MOLECULE TYPE: US-09-006-632-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
US-09-006-632-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 5, Application Patent No. 6184440 GENERAL INFORMATION:
                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 499 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Baldwin, Geraldine F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Shani, Ziv
APPLICANT: Shpigel, Etai
TITLE OF INVENTION: TRANS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
  181 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                            61
                                                                                                                                                                                         Local Similarity
nes 272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141
                                                                                                                                      21
                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                                                                            TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                          TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                  TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RY: USA
10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                   66141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/09006632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                              (212) 790-9090
(212) 869-8864
                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FastSEQ Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoseyov,
                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pennie & Edmonds LLP
                                                                                                                                                                                                                                                                                                                                                  PENNIE
                                                                                                                                                                                                    35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MORPHOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us/09/006,632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oded
                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                     7809-018
                                                                                                                                                                                                   Score 270.2; DB 4
Pred. No. 3.9e-73;
                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÇF,
                                                                                                                                                                                                                 DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALTERED
                                                                                                                                                                                                                 Length
                                                                                                                                                                                        Indels
                                                                                                                                                                                                                  499;
                                                                                                                                                                                       0;
                                                                                                                                                                                       Gaps
                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200
                                                                                                                                                                                       0;
```

```
δõ
                                                                                                                                             Вb
                                                                                                                                                                            Qy
                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                              δÃ
Search completed: October 27, 2002, Job time: 61.152 secs
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: DNA encoding a Cellulose Binding Domain (CBD)-Gaussia lucifera US-09-277-716-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/277,716
CURRENT FILING DATE: 1999-03-26
EARLIER APPLICATION NUMBER: 60/102,939
EARLIER FILING DATE: 1998-10-01
EARLIER APPLICATION NUMBER: 60/089,367
EARLIER FILING DATE: 1998-06-15
EARLIER FILING DATE: 1998-06-15
EARLIER APPLICATION NUMBER: 60/079,624
EARLIER FILING DATE: 1998-03-27
NUMBER OF SEQ ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
US-09-277-716-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 21
LENGTH: 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 21, App.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANI: by ...,
APPLICANI: by ...,
APPLICANI: Szent-Gyorgyi, Christopne:
APPLICANI: Szent-Gyorgyi, Christopne:
APPLICANI: PROLUME, LTD.
TITLE OF INVENTION: LUCIFERASES, FLUORESCENT PROTEINS, NUCLEIC ACIDS ENCODING
TITLE OF INVENTION NUMBER: US/09/277,716A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Bryan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence: fusion construct FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: (1)..(1146)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                             181
                                                                                                                                                                              181
                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                  121
                                                                       241
                                                                                                      241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261 GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATTGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                      TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                     GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                            TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                             ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09277716A
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 270.2; DB 4
Pred. No. 6.2e-73;
0; Mismatches 3
                  20:15:44
                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275
                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THE
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9n:
                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                      295
271.8
271.8
270.2
270.2
                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                Query
Match
     100.0
62.9
38.4
35.4
35.2
35.2
35.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N_Geneseq_032802:*

1. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*

2. /SIDSI/gcgdata/geneseg/geneseqn-embl/NA1981.DAT:*

3. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:*

4. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*

5. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*

6. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*

7. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*

7. /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-677-374-5
768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         October 27, 2002, 14:35:03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1988.DAT:*
0: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1988.DAT:*
0: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1998.DAT:*
1: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1990.DAT:*
2: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1991.DAT:*
3: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*
4: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*
5: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1994.DAT:*
6: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1995.DAT:*
7: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1995.DAT:*
8: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:*
7: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                          /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000, DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2002.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                 /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1998.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*
                                                                                                                                                                                    Length DB
                                                         489
573
1030
                                                                                                             486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapext 1.0
                                                                                                                                                                                    Ħ
                    AAF86247
AAF86246
AAH79040
AAD11043
AAD11044
AAQ72917
AAV74072
                                                                                                                                                AAF86248
                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Search time 194.984 Seconds (without alignments) 6762.541 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3472872
DNA sequence of cl
DNA sequence of E.
OSPA 17kD antigen
Piscirickettsia sa
Clostridium cellul
Clostridium cellul
Cellulose binding
C. cellulovorans C
Clostridium cellul
                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
AAF86248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ၀ ၀
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             იი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
```

ALIGNMENTS

```
Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease, SRS; 17E2; fusion construct; ds.
        CA2281913-A1
                                                                                                                                                            Piscirickettsia salmonis.
                                                                                                                                                                                                                    DNA sequence of c17e2 ospA construct with N-terminal fusion partner
                                                                                                                                                                                                                                       11-JUL-2001
                                                                                                                                                                                                                                                         AAF86248;
                                             misc_feature
                                                                          misc_feature
                                                                                                                                                   Synthetic.
                                                                                                                                                                                                                                                                           AAF86248 standard; DNA; 768
                                                                                                                                                                                                                                       (first entry)
                                                                         /product=
/note= "No
1..285
                                              /note= "I
286..768
                                                                                                   /*tag= a
                                                                                                                       Location/Qualifiers
1..768
                           /note= "Optimised OspA construct c17E2"
                                   /*tag=
                                                                ′*tag=
                                                       "DNA encoding undefined N-terminal fusion partner"
                                                                                "No stop codon is given"
                                   a
                                                                                                               a
                                                                 ь
                                                                                                                                                                                                                                                                             BP.
                                                                                           fusion
                                                                                           partner'
```

```
. !!
                                                                   ρ
                                              Ф
                                                                                               DЬ
                                                                                                                                               В
                                                                                                                      Š
                                                                                                                                                                      Qy
                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                      Ър
                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to a method for the protection against infection of a polklichermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents P. salmonis OspA DNA termed C17E2 optimised for expression in Escherichia coli fused to DNA encoding an undefined N-terminal fusion partner. The protein encoded by this fusion construct is used in a vaccine to create an anti-OspA antibody response.
                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                               421
                                                                      421
                                                                                               361
                                                                                                                         361
                                                                                                                                                 301
                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 4; Fig 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kay WW,
                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-MAR-2001
                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Took
                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                      ۳
                                                                                       CGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTGTGTGGGGCGGTGTTGCCGGCCAGCTGTTC
                                                                                                                                          GGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTG
                                                     GGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATT
                                                                                                                                                                                                          GCAAGCCCAACATCAACCTATGATACATATCTGGATCCGTCTCATATGCGTGGTTGCCTG
                                          GGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGGGCGGTCTGATT
                                                                                                                                                                                             GCAAGCCCAACATCAACCTATGATACATATCTGGATCCGTCTCATATGCGTGGTTGCCTG
                                                                                                                                                                                                                                          TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                              TATTACACAAGTGATGGTACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                          TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                               ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                 2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ) KAY W W.
) BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     220 A; 183 C; 190 G; 175 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΜĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 768; DB 22
Pred. No. le-214;
Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                 180
                 540
                                                                  480
                                                                                                                   420
                                                                                                                                                                                                                                              240
                                          480
                                                                                                                                             360
                                                                                                                                                                     360
                                                                                                                                                                                             300
                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RESULT 2
AAF86247
ID AAF8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , 04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals
                                                                                                                                                                                                                                                                                                                                                                                                                  Poikilothermic vaccine; OspA; sRS; 17E2; ds.
                                                                                 Method for protecting poikilothermic fish against salmonid rickett septicaemia and other rickettsial diseases comprises administering vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                             P-PSDB;
                                                                                                                                                                                         (KAYW/)
                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                            17-SEP-1999;
                                                                                                                                                                                                                                                                                  CA2281913-A1.
                                                                                                                                                                                                                                                              17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                               Piscirickettsia
                                                                                                                                                                               (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAF86247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAF86247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                            WW,
                                                                                                                             2001-316844/34.
DB; AAB81127.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAGGAACGCCGTCAGCAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGTGCCCTCAGCCGGATGGCCGCCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAAAAGTGAAAGCCGGCCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ) KAY W W
) BURIAN
) KUZYK M
                                                               3; Fig 4C;
                                                                                                                                                           Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                           х м
                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                    Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                    fish; Piscirickettsia salmonis; rickettsial
                                                                                                                                                                                                                                          99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                           salmonid rickettsial septicaemia;
                                                                                                                                                                                                                                                                             /Partial
/partial
/product= "OspA"
/note= "Genus specific 17kDa antigen,
not include a stop codon"
                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                                                               salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                       E. coli optimised ospA gene 17E2
                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                               35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA;
                                                                                                                                                           Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      483
                                                                                                                                                           MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                          ickettsial pathogen;
rickettsial disease;
                                                                                                                                                                                                                                                                                                            the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      768
                                                                                                      rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                            ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                             does
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
```

animals

```
ARESULT 3
AAR86246
ID AAF8
XX AAF8
AC AAF8
XX II-J
XX II-J
XX PO1k
KW PO1k
KW Vacc
KW Vacc
XX P1sc
XX P1sc
XX FT CDS
FT CDS
FT CDS
                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    50
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSSSSSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Ma
Best Loc
Matches
                                                                                                      SRS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The prese sequence represents DNA which has been optimised for expression in Escherichia coli to encode the P. salmonis OspA protein. An OspA protein and N-terminal fusion partner is used in a vaccine to create an
                                                                                                               Poikilothermic vaccine; OspA;
                                                                                                                                                 OspA 17kD
                                                                                                                                                                          11-JUL-2001
                                                                                                                                                                                                AAF86246
                                                                                                                                                                                                                      AAF86246 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               anti-OspA antibody response.
                                                                              Piscirickettsia
                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                   766
                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                               706
                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                           646
                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                        586
                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
Local Similarity 100.
483; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Н
                                                                                                                                                                                                                                                                             ₽<u>-</u>
                                                                                                                                                                                                                                                                                                                                                                     CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                               ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTCGATGGCCATCGGCGGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCGACCGGTGCGGTTGTGGGCGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGGCGGTGTT
                                                                                                                                                                                                                                                                                                   AAA 768
                                                                                                                                                                                                                                                                                                                         GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          483
                                                                                                                                                                                                                                                                             483
                                                                                                                                                  antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         вр;
                                                                                                                                                                         (first
                                                                                                                 fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
/partial
/product= "OspA"
/note= "Genus spe
                                                                               salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       108 A; 127
                                   /*tag=
                                                         Location/Qualifiers
                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62.9%;
                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 483; DB; Pred. No. 2.6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; 148
 specific 17kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G; 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 22; 1
2.6e-131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
antigen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
 the
 sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                  disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          present
                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                              765
                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                           705
                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                      645
                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

Length

animals,

ospA OspA

```
$\times CCCCCCCCCCCX\times \times \ti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (KAYW/)
(BURI/)
(KUZY/)
                                                                                                             This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents DNA encoding the P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 2B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA2281913-A1
    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kay ww,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                           anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KAY W W.
BURIAN J.
KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB81126
            486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burian J,
    BP; 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kuzyk
A; 79 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   include a
144 G; 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   stop codon"
T; 0 other;
```

δÃ В δÃ B οy Db Qy В Ş DЬ Š Ъ Ş DЬ ρ Query Match Best Local Matches 710 308 590 248 530 470 410 350 AGAACTTCAGCCGCCAGGAAGTTGGCGCGGGCCACCGGTGCGGTTGTGGGGCGGTGTTGCCG 188 128 Local 89 TCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGAGAAAATCAAACTGA GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTCGATGGCCATCGGCGGTGCGGTTCTGG AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG 364; Similarity Conservative 38.4%; 0; Score 295; DB 22; Pred. No. 3.1e-76; Mismatches Indels 0,: Gaps 529 469 127 409 67 349 709 367 649 307 589 247 187 0

Ъ

428

```
AREGULT
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 904
ANALY 90
        Qy
                                                     В
                                                                                       δõ
                                                                                                                                    B
                                                                                                                                                                          QΥ
                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                  salmonis for production of a vaccine with antibacterial activity t known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUL-2000;
01-JUL-2000;
29-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                           Sequence 489 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New nucleic acids encoding an amino acid sequence homologous to surface antigen present on Piscirickettsia salmonis are useful t protect fish against piscirickettsiosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simard N,
Burzio L;
             470
                                                                                            410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                               350
                                                                                                                                                                                                                                   290 GTGGTTGCCTGCAGGCCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTTGGCTTGGCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (AQUA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Piscirickettsia salmonis; septicaemia; SRS; surface ATCC VR-1361; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200168865-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH79040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH79040
                                                                                                                                      8
                                                                                                                                                                                                                          œ
                                                                   GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGG 469
GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA 529
                                        GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                           AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                                                                                                  AGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTGCGGTTGTGGGGGGGTTTTGCCG 409
                                                                                                                                                                                                            GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-639050/73.
DB; AAG78025.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3; Fig 4; 25pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTACGGCACTGCATGCCGGCAACCGGATGGTCGTTGGCAAGTCATTTCAACAGAAAAA 486
                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard; cDNA; 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Brouwers H,
                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000GB-0005838.
2000GB-0016080.
2000GB-0016082.
2000GB-0018599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001WO-GB01055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                              139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               salmonis polynucleotide P10.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                            38.4%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EURO LTD
                                                                                                                                                                                                                                                                                                                                                                                         A; 79 C; 144 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                piscirickettsiosis;
antigen; vaccine; ar
                                                                                                                                                                                                                                                                                                    Score 295; DB Pred. No. 3.1e-0; Mismatches
                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Griffiths
                                                                                                                                                                                                                                                                                                                                                                                           127
                                                                                                                                                                                                                                                                                                                      DB 22;
3.1e-76;
                                                                                                                                                                                                                                                                                                                                                                                         Ŧ;
                                                                                                                                                                                                                                                                                                    115;
                                                                                                                                                                                                                                                                                                                                                                                         0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           s; salmonid rickettsial; antibacterial; fish;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Valenzuela
                                                                                                                                                                                                                                                                                                                                          Length 489;
                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٦,
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ţ
                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                 to
, also
                                          187
                                                                                                                           127
                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                       349
                                                                                                                                                                                                                                                                                                  0,
```

```
RESULT 5
AAD11043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                       Example 1.2; Fig 1e-1g; 121pp; English.
                                                                                          Preparation of a desired structura
                                                                                                                                                                           (CBDT-)
                                                                                                                                                                                                         08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                 Polysaccharide modification; polysaccharide binding domain; PBD; paperty; fiber; textile; biological crosslinker; mechanical property; clostridium cellulovorans cellulose binding domain; wet strength; durability; elasticity; CBDclos; cellulose binding protein A; CBP A;
                                                                                                                                                                                                                                       02-NOV-2000;
                                                                                                                                                                                                                                                                                WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                          Clostridium
                                                                                                                                                                                                                                                                                                                                                                                               CBD-180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Clostridium cellulovorans cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAD11043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD11043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                   2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAGCATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCAGCAGTACTGCCGCGAATTTCCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                      tion of a polysaccharide containing material having at least structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                          CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEI
                                                                                                                         AAE05746
                                                                                                                                                      Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                         cellulovorans
                                                                                                                                                                                                                                       2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                       99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                            /*tag= a
/product= "C
/note= "CDS
                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
3..572
                                                                                                                                                                                                                                                                                                   /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                      Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     573
                                                                                                                                                                                                                                                                                                        "Cellulose binding domain-180
DS does not include stop codon
                                                                                                                                                    Shoseyov
                                                                                                                                                                        HEBREW UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₿P
                                                                                                                                                                          JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain-180 (CBD-180) DNA.
                                                                                                                                                                                                                                                                                                                  _protein"
                                                                                               least one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247
```

The present invention relates to methods and compositions for cross-linking and/or modifying the properties of polysaccharide materials. The method involves treating the polysaccharide structure with a polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and

```
RESULT 6
RAD1140AD
AD1 10AD
AC AAD
XX AAD
XX POLY
Clos
XX POLY
XX POLY
XX POLY
XX CBD
XX CCBD
XX CCBD
XX CCBD
XX Wet
XX FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT T CDS
FT T CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT CDS
FT C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ᄝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CBD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CBD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is a DNA encoding Clostridium cellulovorans cellulose binding domain (CBD)-180. CBD-180 contains 180 amino acids Clostridium cellulovorans CBD (CBDclos) of cellulose binding protein
                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD11044 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       yarns, fibers and textiles,
The polysaccharide containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents
                                                                 17-MAY-2001
                                                                                                                          WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cross linker protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573
                                                                                                                                                                                                                                                                                                                                                                                                                          cellulovorans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cellulovorans CBD cross linker protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                        /*tag= a
/product= "CCP protein"
/transl_except= "(pos: 1020..1028,
/note= "CDS does not include stop ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                215
                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 2.1e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 271.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G; 148 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22; Length 573;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                 codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CCP) encoding
                                                                                                                                                                                                                                          aa:Pro-Asp)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ≯of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

δ В Ş В S

В

02-NOV-2000; 2000WO-IL00708

Cellulose binding domain.

05-JUN-1995

(first entry)

AAQ72917

standard;

DNA;

80

Ş

```
RESULT 7
AAQ72917
ID AAQ7
XX
AC AAQ7
XX
DT 05-J
XX
Cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        $\times C C C C C C C C C C C C C C C X \times X \times T T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \times T X \tim
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to methods and compositions for cross-linking and/or modifying the properties of polysaccharide materials. The method involves treating the polysaccharide structure with a polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1030 BP; 402 A; 195 C; 166 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1.2; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Preparation of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Levy
                                                                                                                                                                                                                                                                                                                                   243
                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Į,
                                                                                                                                                                                                                                                                                                                                   GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                                                                                                                                                                                                              GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tion of a polysaccharide containing material having at least one
structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence is a DNA encoding Clostridium cellulovorans inding domain (CBD) cross linker protein (CCP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2b-2e; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35.4%;
99.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 271.8; DB 22;
Pred. No. 2.9e-69;
"" amatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                                                                                   277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
```

0;

```
RESULT 8
                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                  В
                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                       C AAQ72917/R63634 is a novel isolated cellulose binding domain. It pref. C binds crystalline with a Kd ranging from 1.5 microM - 0.5 microM, c pref. with a Kd of <1.2 microM, esp. <1.0 microM. The protein and C comprising the CBD and a second protein. The second protein is pref. C Protein A, heparinase, a hormone or an enzyme capable of degrading C an environmental pollutant, or an HSP, HSP antibody, cross-reactive MSP-related protein or an antigenic portion of this. The CBD and FP cellingues. CBD nucleic acid may be used in drug delivery, affinity sepns. and diagnostic techniques. CBD nucleic acid may be obtd. from a variety of cell cources that produce CBDs that bind with high affinity and in a reversible manner or that produce CBD encoding mRNA. The preferred or cource of CBD encoding nucleic acid is C. cellulovorans.
                                                                                                                                                                                                                                                                                                                      Query Match
Best Local !
                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                          Sequence
                                         256
                                                                 241
                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Isolated cellulose binding deapplications. including drug diagnostic techniques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (REGC )
                                                                                                                      181
                                                                                                                                                136
                                                                                                                                                       121 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 10; Fig 1; 125pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; AAR62634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-APR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cellulose binding domain; CBD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W09424158-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clostridium cellulovorans
                                                                                                                                                                                                  76
                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                    16
                                               GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                  TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                         TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                      ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAAGTTAGATAT 120
                                                                                                                                                                                        ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1994-341767/42
                                                                                                                                                                                                                                                                                                        al Similarity
272; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIV CALIFORNIA.
YISSUM RES & DEV
                                                                                                                                                                                                                                                                                                                                                     486 BP; 194 A; 89 C; 79 G; 124 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Goldstein MA,
                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93US-0048164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94WO-US04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1..486
/*tag= a
                                                                                                                                                                                                                                                                                                                35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   domain and fusion proteins - with ug delivery, affinity separations. and
                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                              Score 270.2; DB 1
Pred. No. 5.7e-69;
                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shpiegl
                                                                                                                                                                                                                                                                                                    ω,.
                                                                                                                                                                                                                                                                                                                         15; Length 486;
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                Gaps
                                                                                   255
                                                                                                                                         195
                                                                                                                                                                                                                                                                                                0;
```

Qy В δÃ

망

Qy

121 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA

```
Дb
                               Qγ
                                                      DЬ
                                                                            Qy
                                                                                                     Matches
                                                                                                               Query Match
Best Local
                                                                                                                                                                 CDPA protein of Clostridium cellulovorans. The sequence is used the construction of a fusion protein which can be used in diagnostic immunoassays, e.g. to detect hear-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD, has very high affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but has almost no cellulolytic or amorphogenic activities. The CBD binds over a wide pH range and is not released from cellulose by washing with water.
                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-OCT-1994;
14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                 Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                       This sequence encodes a cellulose binding domain (CBD) derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                (REGC
                                                                                                                                                                                                                                                                                                                                                                                                                         Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunoassay; heat-shock protein; cross reactive protein; detection
antigenic fragment; antibody; insulin-dependent diabetes mellitus;
cellulose; chitin; cellulolytic; amorphogenic; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JAN-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cellulose binding domain; CBD; CbpA; fusion protein; diagnosis; HSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US5856201-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-MAR-1999
                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAV74072 standard;
                                                      16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAV74072;
                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                           ATGTCAGTTGAATTTTÄCAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATA
                                                                                                                                                                                                                                                                                                                                                                                      1999-105130/09
DB; AAW90077.
                                                                                                     272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                ___
                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                 7.2.1; Fig 1A-B; 63pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                            UNIV CALIFORNIA.
YISSUM RES & DEV
                                                                                                                                                  486
                                                                                                                                                                                                                                                                                                                                                                                                                       Goldstein MA,
                                                                                                  Conservative
                                                                                                                                                BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94US-0330394
                                                                                                                                             194 A; 89 C; 79 G; 124 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product= "cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA;
                                                                                                            35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                  0;
                                                                                                            Score 270.2;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                    English.
                                                                                                Mismatches
                                                                                            .2;
.5.7e-69;
3;
                                                                                                                                                                                                                                                                                                                                                                                                                      Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domain"
                                                                                                Indels
                                                                                                                    Length 486;
                                                                                              0,
                                                                                            Gaps
                                               75
                                                                       60
                                                                                                                                                                                                                                                                        the
                                                                                            0;
```

```
RESULT 9
AAX24930
ID 2424930
ID 2
                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                               the cbpA procein of Clostridium cellulovorans. It was obtained by PCR amplification (see also AAX24952-3), and was used in the construction of binary vector pCCl, in which cbd was joined to the promoter and signal region of the novel endo-1.4-beta-glucanase cell gene (see AAX24923) of Arabidopsis thaliana. Expression of cbd in transgenic tobacco plants modulated their growth. The cell promoter can provide expression of any protein in elongating tissue. CBD is an example of a cell wall modulation transgene used to alter the structure or morphology of a plant. Transgenic plants of the invention may have altered biomass, growth, yield, greater or less resistance to biodegradation, be more or less digestible by ruminants, have altered cellulose content, larger or smaller leaves, etc., when compared to non-transgenic plants of the
                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This DNA fragment encodes the cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellulose content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transgenic plants expressing cell-value altered morphology, e.g. increased
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-JAN-1998;
27-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W09907830-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clostridium celulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               morphology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cellulose binding domain; CBD; cbpA; endo-1,4-beta-glucanase; Arabidopsis thaliana; transgenic plant; crop improvement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clostridium
                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (YISS ) YISSUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAX24930 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                  Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                                  species
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                Similarity
                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shoseyov 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 134; 144pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell wall;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cellulovorans
                                                                          Conservative
                                                                                                                                                                   BP; 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0006636.
97IL-0121404.
98US-0006632.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RES & DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98WO-IL00345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA;
                                                                                              35.2%;
98.9%;
                                                                                                                                                                   ۶,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499
                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cbpA
                                                                                                                                                                   C;
                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell-wall modulating protein reased growth, modified fiber
                                                                     Score 270.2; DB 20 Pred. No. 5.8e-69; 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English.
                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cellulose
                                                                                                                                                                   <u>د:</u>
                                                                                                                                                                   127
                                                                                                                                                                   Ή.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275
                                                                                                                                                                   0
                                                                                                                                                                   other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domain
                                                                       Indels
                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CBD) of bottained is ed in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA.
                                                                                                                       499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  have
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         195
                                                                       0
```

```
AAD1104:
ID AAI
   д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
The present invention relates to methods and compositions for cross-linking and/or modifying the properties of polysaccharide materials. The method involves treating the polysaccharide structure with a polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Polysaccharide modification; polysaccharide binding domain; PBD; piyarn; fiber; textile; biological crosslinker; mechanical property; Clostridium cellulovorans cellulose binding domain; wet strength;
                                                                                                                                                                                                                                                    SSIY)
                                                                                                                                                                                                                                                                                     08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                    Example 1.1;
                                                                                                                                                         desired
                                                                                                                                                                   Preparation of a
                                                                                                                                                                                          P-PSDB;
                                                                                                                                                                                                                                                  (CBDT-)
                                                                                                                                                                                                                                                                                                                        02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                       WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             durability;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD11042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD11042 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                    2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tion of a polysaccharide containing material having at least one structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                   CBD TECHNOLOGIES LTD
YISSUM RES DEV CO HE
                                                                                                                                                                                            AAE05745
                                                                                                                                                                                                                          Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                       cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           elasticity; CBDclos; cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                      Page 111;
                                                                                                                                                                                                                                                                                     99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                          /*cag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
3..494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                                                                                                                            A,
                                                                                                                   121pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             507
                                                                                                                                                                                                                            Shoseyov
                                                                                                                                                                                                                                                    HEBREW UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cellulose
                                                                                                                                                                                                                                                                                                                                                                                             "CBDclos protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP
                                                                                                                    English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     binding domain
                                                                                                                                                                                                                                                    JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              binding protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CBDclos)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ds
```

```
RESULT 11
AAD11046
                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              ДЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                               QV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 272;
   WO200134091-A2
                                             misc_feature
                                                                                                                                                                             Chimeric
Chimeric
                                                                          misc_feature
                                                                                                                                                                                                           Polysaccharide modification; polysaccharide binding domain; PBD; papygarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CBD; chimeric protein; S peptide-cellulose binding domain-S protein;
                                                                                                                                                                                                                                                                       Chimeric
                                                                                                                                                                                                                                                                                                                                 AAD11046 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                         261
                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 507 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is a DNA encoding Clostridium cellulovorans cellulose binding domain (CBDclos) of cellulose binding protein A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                            peptide-cellulose binding domain-S protein encoding DNA.
                                                                                                                                                                                    _Clostridium cellulovorans
                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                            /*tag= b
/note= "This 1
652..981
/*tag= _______
                                                                                                                                                                             sp.
                                                                      /partial 68..624
                                                                                      /product= "Spep-CBD-Sprot protein"
/transl_except= "(pos: 979...981, aa:Xaa)"
/note= "Xaa corresponds to in-frame stop codon"
CDS does not include start and stop codon"
                  'notẽ= "This region is
                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Α;
                                                                                                                                                                                                          ds.
                                                                                                                                                                                                                                                                                                                                  984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94 C; 84 G; 129 T; 0 other;
                                                                                                                                                                                                                                                                                                                                 ВP
                                                  region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 270.2; DB 2
Pred. No. 5.8e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                  is.
                   derived
                                                derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 22;
                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Indels
                                                                                    p codon"
                                               <u>ດ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                             cellulovorans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                     260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RESULT 12
                                                                Qy
                                                                                            Ъ
                                                                                                                     9
                                                                                                                                                  Дb
                                                                                                                                                                          Qy
                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                      ΩV
                                                                                                                                                                                                                                                            Ъ
                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to methods and compositions for cross-
CC linking and/or modifying the properties of polysaccharide materials.
CC The method involves treating the polysaccharide structure with a
CC polysaccharide binding domain (PBD) fusion protein. The method is
CC used to alter the structural, chemical, physical, electrical and
CC warns, fibers and textiles, using biological crosslinking agents.
CC The polysaccharide containing materials have improved mechanical
CC reagent is such as wet strengths, durability and elasticity. The PBD
CC which eliminates the sling step. The use of a biological crosslinker
CC improves the recyclability of paper products. The PBD reagent maintains
CC the fine fibers in a slurry therefore resulting in better recovery of
CC caw materials. The PBD molecules are eluted by strong alkaline conditions
CC center the paper.
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                 Matches
                                       343
                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                      Clostridium cellulovorans and bovine.
                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is a DNA encoding S peptide-cellulose binding domain-S protein (Spep-CBD-Sprot), a fusion protein derived from
                                                                                                                                                                           121
                                                                                                                                                                                                                                                            103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                    61 ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGAACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                              hes 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 4; Fig 4b-4g; 121pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                           02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-MAY-2001
                             GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                            GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                  TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                               TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                              TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                  984 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nussinovitch
                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                         325 A; 240 C; 193 G; 226 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                     35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                     Score 270.2; DB;
Pred. No. 8.3e-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English
                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                377
                                                                                                                                                                                                                                                                                                                           22; Length
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                               Gaps
                                                                                342
                                                                                                                                                              180
                                                                                                                                     282
                                                                                                                                                                                                                                             162
```

0;

AAZ27550 ID AAZ: XX

AAZ27550 standard; DNA; 1146

```
Ş
                                                                                                                                                                                                                                  δ
                                                         В
                                                                                                                  밁
                                                                                                                                          Q
   밁
                                                                                                                                                                                                                                                                      Renilla and Ptilosarcus green fluorescent protein (GFP) nucleic acids and C proteins. The luciferases and GFPs can be used in C bioluminescence-generating systems, assays, screening methods, diagnostic method and articles of manufacture. They can be expressed using e.g. bacterial, yeast, fungal, plant, insect or animal cells. The Renilla mullerl, Gaussia and Pleuromamma luciferase or Renilla or Ptilosarcus GFPs can be used in e.g. toys, cosmetics, fountains, personal care items, fairy dust, beverages, soft drinks, foods, textile products, bubbles, balloons, personal items, dentrifrices, soaps, body paints, bubble bath, ink or paper products. In particular, they can be used in e.g. squirt guns, finger paints, foot bags, greeting cards, slimy play material, clothing, bubble making toys, bath powders, cosmetics, body commendations, gells, body powders, body creams, toothpastes, mouthwashes, cospess, body paints, bubble bath, inks, wrapping paper, gelatins, icings, frostings, greeting cards, beer, wine, champagne, soft drinks, ice cubes, ice, dry ice or fountains. The nucleic acids can also be used to produce
                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-MAR-1998;
15-JUN-1998;
01-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 222-223; 233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated Renilla mulleri, Renilla and Ptilosarcus green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9949019-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Luciferase; green fluorescent protein; GFP; screening assay; diagnosis; bioluminescence-generating system; toy; cosmetic; fairy dust; beverage; body paint; squirt gun; balloon; slimy play material; soap; toothpaste;
                                                                                                                                                                                                                                  Sequence 1146 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence encodes a luciferase of the invention. The invention relates to Renilla mulleri, Gaussia and Pleuromamma luciferase and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-DEC-1999
                                                                                                                                                                                                                                                               transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BRYA/)
   121
                              121
                                                          61
                                                                                     61
                                                                                                                                              <u>بـ</u>
                                                                                                               1999-580443/49
DB; AAY39952.
TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                         ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROLUME
BRYAN B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein;
                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                               fish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Szent-Gyorgyi
                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0079624.
98US-0089367.
98US-0102939.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US06698.
                                                                                                                                                                                                                                  396 A; 222 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fusion
                                                                                                                                                                                                                                                             plants.
                                                                                                                                                                                       35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein coding
                                                                                                                                                                           0;
                                                                                                                                                                        Pred. No. ye-
0; Mismatches
                                                                                                                                                                                        Score 270.2; DB Pred. No. 9e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaussia and Pleuromamma luciferase fluorescent protein nucleic acids -
                                                                                                                                                                                                                                 247
                                                                                                                                                                                                                                  ű
                                                                                                                                                                                                                                  281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence
                                                                                                                                                                                                      В
                                                                                                                                                                                                                                  ;;
                                                                                                                                                                                                      20;
                                                                                                                                                                         ω
··
                                                                                                                                                                                                                                  0 other;
                                                                                                                                                                           Indels
                                                                                                                                                                                                      Length
                                                                                                                                                                           0;
                                                                                                                                                                         Gaps
                                                                                                                                             60
                                                                                                                   60
                                                                                                                                                                         0;
```

```
RESULT 1.
ANAD222011
ID ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD22011
ANAD222011
ANAD22011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD222011
ANAD22011
ANAD222011
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
The patent discloses sea pansy (Renilla reniformis) green fluorescent proteins (GFP) and their corresponding polynucleotides. The invention also relates to sequences of the bioluminescence generating system (e.g. luciferase). R. reniformis GFP are used in diagnostic methods and in the production of novelty items such as toys (e.g. squirt gun, pellet gun, toy "Halloween" eggs, toy cigarettes, board/card game toys, finger paints, slimy play material, bubbles in bubble making toys, fishing lures, dolls, sparklers, magic wand toys, balloons, personal care item (e.g. cosmetic, bath powders, body creams, tooth pastes, mouth wash, soaps, body paints, bubble bath), ornamental transgenic plants, fountain, fairy dust, food (gelatins, icings, frosting, beers, wine, champagne, milk, soft drinks, ice cubes, ice, dry ice, beverage), textile (foot bag, clothing) and/or paper product (greeting cards, wrapping paper). The present sequence is a DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Green fluorescent protein; GFP, bioluminescence generating system; luciferase; finger paint; slimy play material; fishing lure; sparkl doll; balloon; personal care item; cosmetic; bath powder; body crea tooth paste; mouth wash; soap; body paint; ornamental transgenic pl bubble bath; fountain; fairy dust; food; gelatin; icing; frosting; wine; champagne; milk; soft drink; ice cube; ice; foot bag; beverag dryice; textile; clothing; paper product; greeting card; wrapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-MAR-2001; 2001WO-US08277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaussia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaussia species
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD22201 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002-010561/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВЛ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           c acids encoding Renilla reniformis green fluorescent proteins,
in diagnostic bioluminescence procedures -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROLUME
BRYAN B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE13383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Szent-Gyorgyi C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page 162-163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-189691P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CBD-luciferase fusion protein encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product= "Gaussia CBD-luciferase fusion protein"
/note= "CDS does not include start and stop codon"
/partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1..1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          175pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Szczepaniak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             beverage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sparkler;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             paper;
```

encoding

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOXX
(CBDT-) CBD TECHNOLOGIES LTD.
(YISS) YISSUM RES DEV CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                08-NOV-1999;
18-NOV-1999;
                                                         02-NOV-2000; 2000WO-IL00708
                                                                               17-MAY-2001
                                                                                                 WO200134091-A2
                                                                                                                                     misc_feature
                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                               Clostridium cellulovorans.
                                                                                                                                                                                                                                                                                 yarn; fiber; textile; wet strength; durabili ProtA-CBD; ds.
                                                                                                                                                                                                                                                                                  Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; protein A-cellulose binding domain;
                                                                                                                                                                                                                                                                                                                         Clostridium cellulovorans protein A-cellulose binding domain DNA
                                                                                                                                                                                                                                                                                                                                                                                   AAD11045 standard; DNA; 1288
                                                                                                                                                                                                                                                                                                                                                    24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                     AAD11045;
                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _
                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGCCCAACATCAACCTATGATACATATGTTGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 98.9
72; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaussia species CBD-luciferase fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1146 BP;
                                                                                                                                                                                                                                                                                                                                                 (first entry)
                              99US-0164140
99US-0166389
                                                                                                                                                                        /partial 3..791
                                                                                                                                                                                  /product= "Protein A-cellulose binding domain protein" /transl_except= "(pos: 1281..1283, aa:Xaa)" /note= "xaa corresponds to in-frame stop codon; CDS does not include stop codon"
                                                                                                                                   cloning vector<sup>®</sup>
795..1280
                                                                                                                                                  /note= "This region
                                                                                                                                                                                                                            /*tag=
                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     396 A; 222 C; 247 G; 281 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35.2%;
                                                                                                     c
"This region is derived from cbp A
                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 270.2;
Pred. No. 9e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                   18
                                                                                                                                                  derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 24;
                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3; Indels
                                                                                                                                                 pRIT2T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                             дb
                                                                                                                                                             Qy
                                                                                                                                                                                B
                                                                                                                                                                                                 Ωy
```

Query Match

```
The present invention relates to methods and compositions for cross-CC linking and/or modifying the properties of polysaccharide materials. CC The method involves treating the polysaccharide structure with a CC polysaccharide binding domain (PBD) fusion protein. The method is CC mechanical properties of polysaccharide materials such as paper, CC pars, fibers and textiles, using biological crosslinking agents. CC The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD CC reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker CC improves the recyclability of paper products. The PBD reagent maintains CC raw materials. The PBD molecules are eluted by strong alkaline conditions on the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the constraints and conditions to the conditions and conditions to the conditions are conditioned to the conditions and conditions to the conditions are conditions and conditions are conditions to the conditions are conditions and conditions are conditions.
                                                The present sequence is a DNA encoding Clostridium cellulovorans protein A-cellulose binding domain (ProtA-CBD). This sequence co a part of cbpA gene and a part of pRIT2T vector sequence.
Sequence 1288 BP; 523 A; 267 C; 202 G; 296 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 1.3; Fig 3b-3g; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Preparation of a polysaccharide containing material having at least desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nussinovitch A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                        This sequence contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   least one
```

```
망
                                                             Qy
                                                                          DЬ
                                                                                     Qy
                                                                                                 DЬ
                                                                                                             Qy
                                                                                                                        Best Loc
Matches
   1050
      241 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                           990
                                       181
                                                                                            121
                                                                          870
                                                                                     61
                                                                                                  Local
                    GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                        TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                   Similarity
                                                                                                                       Conservative
                                                                                                                           35.2%;
98.9%;
                                                                                                                       0;
                                                                                                                    Score 270.2; DB 22;
Pred. No. 9.6e-69;
Mismatches 3;
                                                                                                                                DB 22; Length
                                                                                                                    0;
                                                                                                                   Gaps
                                                                                            869
                                                                                                                    0
```

```
AAF86254/c
ID AAF862
XX
AC AAF862
AC AAF862
DY 11-JUL
XX
DE PCR pr
XX
POikil
KW Poikil
KW Vaccin
KW SRS; 1
XX
                                                                                                                                                                                                  RESULT 15
 Poikilothermic fish; Piscirickettsia salmonis; rickettsial pavaccine; OspA; salmonid rickettsial septicaemia; rickettsial SRS; 17E2; fusion construct; PCR primer; ss.
                                                                   PCR primer #4 used in cloning
                                                                                                      11-JUL-2001
                                                                                                                                       AAF86254;
                                                                                                                                                               AAF86254 standard;
                                                                                                   (first entry)
                                                                                                                                                                DNA; 118
                                                             an optimisation of OspA gene
```

pathogen; al disease;

```
á
Search completed: October 27, 2002, 16:40:50 Job time: 198.984 secs
                                                                В
                                                                                                                               В
                                                                                                                                                          Ş
                                                                                                                                                                                            Ouery Match 15.4%; Score 118; DB 22; Length 118; Best Local Similarity 100.0%; Pred. No. 1e-24; Matches 118; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                       This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis: The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                               Sequence 118 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 3; Fig 4B; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Piscirickettsia salmonis.
                                                                                                                                 118
                                                                                                                                                                                                                                                                                                 invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-SEP-1999;
                                                                58
                                                                                                                            GGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAA 552
                                                             Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99CA-2281913.
                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kuzyk MA;
                                                                                                                                                                                                                                                               A; 32 C;
                                                                                                                                                                                                                                                                28 G; 37 T; 0 other;
                                                                                                                                                                                                0;
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                0;
```

THIS PAGE BLANK (USPTO)

ł

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                    seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                             GenEmbl:*
1: gb_ba:*
2: gb_htg:
3: gb_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            October 27, 2002, 15:07:23 ; Search time 1487.36 Seconds (without alignments) 10805.408 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-677-374-5
768
                                          1797656 segs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                                                             Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                                                                           gb_pat:*
gb_ph:*
gb_pl:*
                                                                                                                                                                                                                                                                                                                                            gb_ba:*
gb_htg:*
gb_in:*
                                                                                                                                                                                                                                                                                                                         gb_om:*
                                       em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                   gb_pr:*
                                                                                                  em_ph: *
em_pl: *
em_ro: *
em_sts: *
                                                                                                                                        em_hum: *
em_in: *
em_mu: *
em_om: *
em_or: *
em_ov: *
                                                                                                                                                                                                                                 gb_un:*
                                                                                                                                                                                                                                                             gb_ro:*
                                                                               em_un:*
em_v1:*
                                                                                                                                                                                                              em_fun:*
                                                                                                                                                                                                                          em_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3595312
                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                        000 0
                                                                                                                                                                                                                                                                                                                                                       O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
```

0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	19 20 21 23 24 25 26 27	112 112 114 115 116 117 117 118	321
43.8 43.8 43.8 42.8 42.8	44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	76. 70. 70. 70. 70. 66. 61.	2700.22	29 29 70.
		$\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega_{\omega$	& & & & & & & & & & & & & & & & & & &	5.00
50055000	336 336 312 312 312 312 312 312 312 312 312	8459708614	4 4 8 8 6 6 6 7 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6 0	888
1291929	00001110111	11111611	\vdash σ σ σ σ σ σ σ σ σ σ	616
0100004	CSCELZ RIRIKGCA CTCHIAGEN AX345104 CSCELYZ REXX04 CTH420770 CTH420770 CTH420770 AX251295 AX082874	AB004845 CCU40345 2 AF285517 AR129965 CTCIPBA CLOCIPBA AE007606 AF155197 CLOFEEGASE CTH275974	AR001083 AR027448 AR027449 AR058257 AR058258 I18514 I18514 I16614 I166615 I188799 I188790 AR096204 AR151733 AX250579	5241 8415 0108
9315 Homo sa 3433 Homo sa 4865 Homo sa 60982 Sulfolo 3865 Human [3865 Human [4102 Mus mus 6071 Ralstor	C.stercora Rickettsia C.thermoce A Sequence C.stercora 73 Ricketts 70 Clostrid 95 Sequence 74 Sequence	Clostridi Clostridi Sil Synthe Si Sequenc C. thermod Clostridi G Clostridi A Clostridi	0.000	$\omega \omega$

ALIGNMENTS

BASE COUNT ORIGIN VERSION KEYWORDS SOURCE ORGANISM LOCUS
DEFINITION
ACCESSION RESULT 1 AX252413 FEATURES REFERENCE TITLE JOURNAL AUTHORS source 489 bp Sequence 5 from Patent W00168865. AX252413 Fish vaccine against piscirickettsia salmonis Patent: WO 0168865-A 5 20-SEP-2001; Aqua Health (Europe) Limited (GB) Location/Qualifiers Simard, N., Brouwers, H., Jones, S.F., Griffiths, S., Piscirickettsia.
l (bases 1 to 489) Piscirickettsia salmonis. Piscirickettsia salmonis Burzio, L. Bacteria; Proteobacteria; gamma subdivision; Piscirickettsia AX252413.1 GI:15985721 139 a /organism="Piscirickettsia salmonis" /db_xref="taxon:1238" 79 c 144 g 127 t .489 DNA linear Valenzuela, P. and PAT 05-OCT-2001 group;

Result No.

Score

Query Match Length

DB

ΙD

Description

SUMMARIES

```
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
AF184152
LOCUS
                                                                                                                                                                                                                                                                                                                                              JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
Ŀ
                                                                                                                          gene
                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Sin
hes 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGGAGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTGTCGATGGCCATCGGCGGTGCGGTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAACTTCAGCCGCCAGGAAGTTGGCGGCGGCCACCGGTGCGGTTGTGGGGGGGTGTTGCCG 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGTTGCCTGCAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAACTTTAGTCGTCAAGAAGTCGGAGCTGCGACTGGGGGCTGTTGTTGGCGGTGTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGATGTTTGCAAGGTAGTAGTCTAATTATTATCAGTGTGTTTTTAGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCAGAGTTTGGAAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                            Submitted (10-SEP-1999) Biochemistry & Victoria, Petch Building, PO Box 3055, Location/Qualifiers
1. .4983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Piscirickettsia salmonis alanine racemase (alr) gene, partial cds; and BAX (bax), DNA repair enzyme RadA (radA), 17 kba antigen (ospA), and transposase (tnpA) genes, complete cds.
                                                                                                                                                                                                                                                                                                                                                             Identification of a genus-common Rickettsial surface salmonid pathogen Piscirickettsia salmonis Unpublished
                                                                                                                                                                                                                                                                                                     2 (bases 1 to 4983)
Kuzyk, M.A. and Kay, W.W.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                         Kuzyk, M.A., Burian, J., Thornton, J.C. and Kay, W.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Piscirickettsia salmonis.
Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF184152.1 GI:10441343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Piscirickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                     /gene="alr"
<1. .501
                      /codon_start=1
/transl_table=11
                                                                                                                                           /clone="pB12"
                                                                                                                                                                /db_xref="taxon:1238'
                                                                                                                                                                                  /strain="LF-89"
                                                            /gene="alr"
                                                                                                                                                                                                     /organism="Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                to 4983)
                                                                                                                            .501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 295; DB 6; Length 489; Pred. No. 1.5e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gamma subdivision; Piscirickettsia
                                                                                                                                                                                                                                                               Microbiology,
Victoria, BC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                               University of V8W 3P6, Canada
                                                                                                                                                                                                                                                                                                                                                                                                     antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    group;
                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
/product="17 kDa antigen"
/protein_id="AAG17000.1"
/db_xref="GI:10441346"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="DNA repair enzyme RadA"
/protein_id="AAG1998.1"
/protein_id="AAG1998.1"
/db_xref="GI:10441344"
//translation="MSKOKNQYVCSDCGGIAKKULGQCPHCQGWISLSEVKEVLPNRP
RSQRPAGFAGIDAPKVKCLSEITPEDISRQVYLICSEDRVLGGGLVHGAVILLGGDP
GRSQRFAGFAGIDAPKVKCLSEITPEDISRQVYGTULFKELGSQDVDLIKLAETQVER
GIGKSTLLLQTSVWCTQFGKVLYTETGEBSLGGVTLTKSGLAGDVDCHLKATGTCLELVG
GIGKSTLLLQTSVLUDSIQTIFTESLQSAPGGVAQVRESAAILTQFAKRTGTCLELVG
ILKAAEITQPKVLIVDSIQTIFTESLQSAPGGVAQVRESAAILTQFAKRTGTCLELVG
ILKAAEITQPKVLEHYDTVLYFEGBQDSRFRLLRAVKNRFCQAANELGIFAMTETGL
KTVSNPSAIFLSRYEDLQPGSVVMVAWEGTRILLVEVQALVDESHSSNPRRIAVGLDQ
QRLAMLLAVLNRHGGIASYDQDVFINVVGGMKITETAADLALLLACVSSIGRALSQG
QRLAMLLAVLNRHGGIASYDQDVFINVGGMKTYTETAADLALLLACVSSIGRALSQG
LIVFGEIGLSGEIRPVQRGLERIKEAVKHGFTQAIVPLANCPKQKVDGIEIVGVKHLE
                                                                                                                    complement(3842.
/gene="tnpA"
                                                                                                                                                                                                 /insertion_seq="insertion 3560..3846"
                  /product="transposase"
/protein_id="AAG16999.
/db_xref="GI:10441345"
                                                                                                                                                                                complement(3842.
                                                                                                                                                                                                                                                                                                                                                             GNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVIST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2834. .3322
/gene="ospA"
/evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="AAG17002.1"
/db_xref="01:10441348"
/db_xref="01:10441348"
/translation="MLSLAVITTAYLAQOPLFSAPTSKTQINTAYSQDIQSIKQEFII
/translation="MLSLAVITTAYLAQQFLFSAPTSKTQINTAYSQDIQSIKQEFII
KITQSENTINQIILOKRQHILSLIQKKSISKQEITQLQALAKQYKLNKLHFKHPQDFS
KITQSENTINQIILOKRQHILSLIQKKSISKQEITQKARPANNH
LLLKRYDIIPNALISAQAINESNWGRSRFAYEGNNFFGMRCHYPGCGIIPKARPANNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="alanine racemase"
/protein_id="AAGI7001.1"
/protein_id="AAGI7001.1"
/db_xref==701:10441347"
/translation="NSAAIFNFSYERYDWVRPGIMLYGISPRADKNGVDLELQPVMHV
/SRLISVKQLKQEESVGYGATWQCPEDWQVGILSLGYGGYPRLAASGTPFLVRQQRC
VSRLISVKQLKQEESVGYGATWQCPEDWQVGILSLGYGGYFRADKNGVDLELQPVMHV
VSRLISVKQLKQEESVGYGATWQCPEDWQVGILSLGYGGYPRADKNGVDLELQPVMHV
                                                                                                                                                                                                                                                                                /organism="Piscirickettsia
/strain="LF-89"
                                                                                                                                                                                                                                                                                                                          3560. .4849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /evidence=experimental
1373. .2743
                                                                               /transl_table=11
                                                                                                                                                         /gene="tnpA"
                                                                                                                                                                                                                                         /db_xref="taxon:1238"
/clone="pB12"
                                                                                                                                                                                                                                                                                                                                                                              /translation="mnrGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQ
LFGKGSGRVAMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="ospA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTKYVELIQTIITRYLSKESTSQIP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(526. .1257)
                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene-"radA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="radA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1373. .2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WEVANYSSMTASVRAYIHTLNTHNAYQALRDLRAHMRANHQDVSAFKLAEGLTAYSIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /evidence=not_experimental
/product="BAX"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="bax"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="bax"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement(526.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PYIWQE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGRVSMDMIAIDLRRCPDAGVGEAVTVWGQDLPVEEIARHVGTIAYELVCNMPLRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .3322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to the rickettsial 17 kDa antigen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .1257)
                                                                                                                                                                                .4561)
                                                                                                                                         .4561)
                                                                                                                                                                                                                    sequence-like
                                                                                                                                                                                                                                                                                                   salmonis"
                                                                                                                                                                                                                      element"
```

ķ

```
repeat_region
BASE COUNT 1362
ORIGIN
                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                       JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                  RESULT 3
AR001082
                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 364
                                     Query Match
Best Local S
Matches 272
                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                     3261
                                                                                                                                                                                                                                                                                                                                                                                                                     3201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                410
                                                                                                                                                                                                                                                                                                                                                                                            710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Sir
hes 364;
             ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGATGTTTGCAAGGTAGTAGTCTAATTATCAGTGTGTTTTTAGGTTGGCTGTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGTTGCCTGCAGGCCACCTCTCTGATCATTATCTCTGTTTTTCCTGGTTGCGGCTTGCCCCC 349
                                                                                                                                                                                                                                                                                                                                                                  GTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAA 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAACAGGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGATTAATTGGTTCTAAAATCGGTCAATCGATGGATCAGCAGGATAAAATAAAGCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCAGCTGTTTGGTAAAGGTAGTGGTCGAGTTGCAATGGCCATTGGTGGTGCTGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCAGCTGTTCGGTAAAAGGCTCTGGTCGTCGTCGATGGCCATCGGCGGTGCGGTTCTGG
GCCAGCAATATTGTCGAGAATTTCAGCAAAAGGCGATGATTGCAGGGCAGAAGCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAATAGTTATAGTGTTGAGCCAGTGCGTACTTACCAGCGTTACAATAAGCAAGAGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCAGAGTTTGGAAAAGGTAAAAGCAGGGCAAGTGACACGTTGGCGTAATCCAGATACAG
                                                                                                                                                                                                                                                                AR001082
Sequence 1
AR001082
AR001082.1
                                                                                                                                                   proteins
Patent: U
                                                                                                                                                                         Shoseyov,O. Kits and methods of detection using
                                                                                                                                                                                                                Unclassified
                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                          Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                 Similarity
                                                                                                                                                                                                      (bases
                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                     Conservative
                                                                                                                                                    S
                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MDLTLISLFCVIDDFCQELLPQWNAILLEDINKKRNKPSQMSTS EIMTIMIYFHKSNYRNFKMYYLHVIKGSMVKYFPNSVSYNRFVELMPSILLPLCFFIA AQGKTATGIYFVDSTILRVCHEKRASQNRAFKGLAKKSKSTMGWYYGFKLHIIVNDMG ELMAFKMSKATTDDRVVLPKMAENLTGKIIGDKGYISQKLFDQLYEKGLQLITKIRKN MKNKLMIDKINLKKRGIIA"
                                                                                                 /organism="unknown"
89 c 79 g
                                                                                                                                     s 5738984-A 1 14-APR-1998;
Location/Qualifiers
                                                                                                                                                                                                                                                                                         from
                                                                                                                             . 486
                                                                                                                                                                                                      to 486)
                                                                                                                                                                                                                                                                   GI:3963149
                                                 35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38.4%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 4849
                                                                                                                                                                                                                                                                                         patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                     0
                                     Score 270.2;
Pred. No. 3.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1265 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 295; DB 1;
Pred. No. 2.3e-64;
); Mismatches 115
                                                                                                                                                                                                                                                                                           Sn
                                                                                                                                                                                                                                                                                         486 bp
5 5738984.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1578
                                                                                                    124
                                ; DB b,
3.2e-58;
3;
                                                                                                   d
                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                            cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                             Length
                                       Indels
                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                             binding domain
                                                                                                                                                                                                                                                                                                        PAT
                                     0;
                                                                                                                                                                                                                                                                                                        04-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    3260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2900
                                                                                                                                                                             fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                       0
```

밁 δ 밁 Š 밁 Š ᄝ Š 망 50 밁 Ş В δ 밁 S

LOCUS

Ş

Unknown

```
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                               RESULT 5
AR027448
LOCUS
                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                  RESULT 4
AR001083/c
                                                                                                                                                                                                                                                        JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                 망
                                                                             δõ
                                                                                            В
                                                                                                      Qγ
                                                                                                                     밁
                                                                                                                                 QΥ
                                                                                                                                               ₽
                                                                                                                                                         Qy
                                                                                                                                                                           Вb
                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                           471
                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                  136
                                                                                                                                                411
                                                                                                                                                                                                                                                                                                                                                                               256
                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                 231
                                                                              241
                                                                                            291
                                                                                                         181
                                                                                                                      351
                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                             76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16
                                                                                                                                                                                                           Local
                                                                                                                                                                                       ـــ
                                                                                                                                               ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                              GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                           TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                          ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                    272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AR001083
Sequence
AR001083
                   ARO27448
Sequence
ARO27448
                                                                                                                                                                                                                                                               proteins
Patent: (
                                                                                                                                                                                                                                                                          Unclassified.

I (bases 1 to 486)
Shoseyov,O.
Kits and methods of detection using
                                                                                                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                                                                                          AR001083.1
                                                                                                                                                                                                                                                                                                            Unknown
             AR027448.1
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                               US 5738984-A 3 14-APR-1998;
                                                                                                                                                                                                                                                                                                                                       ω
                          \vdash
                                                                                                                                                                                                                                    /organism="unknown"
79 c 89 g
                                                                                                                                                                                                                                                  1. .486
                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                       from
                          from
                                                                                                                                                                                                                                                                                                                          GI:3963150
             GI:5938268
                                                                                                                                                                                                          35.2%;
                                                                                                                                                                                                                                                                                                                                      patent
                          patent
                                                                                                                                                                                                     0;
                                                                                                                                                                                                           Score 270.2; DB 6 Pred. No. 3.2e-58;
                                                                                                                                                                                                                                                                                                                                       SD
                          SD
                                                                                                                                                                                                                                                                                                                                       486 bp
s 5738984
                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                     194
                                                                 197
                                                                                                                                                                                                                                                                                                                                              DNA
                                 DNA
                                                                                                                                                                                                                                                                             cellulose binding
                                                                                                                                                                                                                 6,
                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                  486;
                                                                                                                                                                                                                                                                                                                                              PAT 04-DEC-1998
                                  PAT
                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                             domain
                                                                                                                                                                                                    Gaps
                                                                                                                                                             120
                                                                                                                                                                           412
                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                             135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                        240
                                                                                                                                                 352
                                                                                                                                                                                                                                                                             fusion
                                                                                                                                                                                                     0
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                              JOURNAL
FEATURES
                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
AR027449/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
FEATURES
         δÃ
                                                  QΥ
                               В
                                                                           В
                                                                                             QY
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Βb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                             Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                       Query Match
Best Local Similarity
Matches 272; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                           471
           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                          TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
           TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                 ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAAGTTAGATAT
product
Patent: US 5856201-A 1 05-JAN-1999;
Location/Qualifiers
1. .486---"...hnown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein,M.A.
Methods of detection using a cellulose
                                                                                                                                                                                                                         Patent: US 5856201-A 3
                                                                                                                                                                                                                                             Unclassified.

1 (bases I to 486)
Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Doi Methods of detection using a cellulose binding
                                                                                                                                                                                                                                                                                                                           AR027449.1
                                                                                                                                                                                                                                                                                                                                       Sequence 3
AR027449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                            Unknown
                                                                                                                                                                                                                                                                                                                                                             AR027449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194
                                                                                                                                                                               124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
89 c 79 g
                                                                                                                                                                              /organism="unknown"
79 c 89 g
                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                     .486
                                                                                                                                                                                                                                                                                                                            GI:5938269
                                                                                                                                 35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                      Score 270.2; DB 6
Pred. No. 3.2e-58;
0; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 270.2; DB 6
Pred. No. 3.2e-58;
                                                                                                                                                                                                                           05-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                           Goldstein, M.A. and Doi, R.H
                                                                                                                                                                                                                                                                                                                                                 486 bp
5856201.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124
                                                                                                                                                                               194
                                                                                                                                            DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . and Doi,R.H binding doma
                                                                                                                        ω
                                                                                                                        Indels
                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domain
                                                                                                                                                                                                                                                domain
                                                                                                                                               486;
                                                                                                                                                                                                                                                                                                                                                             PAT 29-SEP-1999
                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fusion
                                                                                                                                                                                                                                                  fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                 REFERENCE
AUTHORS
TITLE
                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
AR058257
LOCUS
DEFINITION
                JOURNAL
FEATURES
                                                                                                               LOCUS
DEFINITION
                                                                                                                               RESULT 8
AR058258/c
                                                                                                                                                                    밁
                                                                                                                                                                                   Qy
                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                       Query
Best L
                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                    241
                                                                                                                                                                                                     196
                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                             y Match
Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         351
                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                                                             \vdash
                                                                                                                                                                  GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                    TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAAGAAACA 240
                                                                                                                                                                                                                                                                         ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                     TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                            TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
            Unclassified.

1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein, Cellulose binding domain proteins
Patent: US 5837814-A 3 17-NOV-1998;
Location/Qualifiers
                                                                                                      AR058258
Sequence
AR058258
                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified.

1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein, Cellulose binding domain proteins
Patent: US 5837814-A 1 17-NOV-1998;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR058257
Sequence 1 from
AR058257
                                                                     Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unknown.
                                                                             Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR058257.1
                                                                                              AR058258.1
                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                        /organism="unknown"
89 c 79 g
/organism="unknown"
                                                                                                               from
                                                                                              GI:5983835
                                                                                                                                                                                                                                                                                                                                                     35.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                patent US
                                                                                                               patent US
                                                                                                                                                                                                                                                                                                                                              Score 270.2;
Pred. No. 3.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                486 bp
s 5837814.
                                          Goldstein, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Goldstein, M.
                                                                                                                486 bp
5837814.
                                                                                                                                                                                                                                                                                                                                                                                          124
                                                                                                                                                                                                                                                                                                                                              1.2e-58;
les 3;
                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      275
                                                                                                                                                                    290
                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                               6;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Doi, R
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                486;
                                                                                                                         PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAT
                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                         29-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-SEP-1999
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                       255
                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          292
                                                                                                                                                                                                                                                                                                                                              0
```

à

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                           RESULT 9
I18514
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                          В
6
                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
Вр
         γQ
                        B 5
                                                     밁
                                                                     δ
                                                                                        B &
                                                                                                                  DЬ
                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유 성
                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                    Query Match
Best Local S
Matches 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                              351
                                                                                                                                                                                                                                                                                                                                                                                                                                           411
                             196
                                             181
                                                           136
                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                            121
256
              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       y Match
Local Sin
hes 272;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                        61
                                                                                                                       16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                          ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                      TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
       GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                            GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                             TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                 l (bases 1 to 486)

l (bases 1 to 486)

Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Nucleic acids encoding a cellulose binding Patent: US 5496934-A 1 05-MAR-1996;

Location/Qualifiers

1. 486
                                                                                                                                                                                                                                                                                    I18514
Sequence 1 from 1
I18514
I18514.1 GI:159
                                                                                                                                                                                                                                                       Unclassified
                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                      Unknown.
                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                           194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                    Conservative
                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                          /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                      GI:1598869
                                                                                                                                                           35.2%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                   patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                   Score 270.2; DB 6; Pred. No. 3.2e-58; 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 270.2;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                  486 bp
5496934.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                          124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; DB 6;
3.2e-58;
1es 3;
                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                  Length
                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                        Doi, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                            07-0CT-1996
                                                                                                                                                   Gaps
                                            240
                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                           352
                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                             255
                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
BASE COUNT
ORIGIN
                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
I18515/c
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                             RESULT
166614
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                Q
                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                    Query Match
Best Local S
Matches 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 98.9
Matches 272; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                      ORGANISM
                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                            411
                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                 291
                                                                                                                                                                                                                                                                                                                                                       351
                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                           231
                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                             61
                                     Local Similarity
nes 272; Conser
ATCAAAATTACTAACACATCTGACAGTGATTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                    GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                           GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                                                                                                                                                                                                                                       TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
118515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified.

1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein, Nucleic acids encoding a cellulose Patent: US 5496934-A 3 05-MAR-1996;
                                                                                                           l (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein,M.A.
Methods of use of cellulose binding doma
Patent: US 5670623-A 1 23-SEP-1997;
Location/Qualifiers
                                                                                                                                                           Unknown.
Unclassified
                                                                                                                                                                                                 Sequence 1 from patent US 166614 166614.1 GI:2724592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118515
                                                                                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               I18515
                                                                                                                                                                                                                             166614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124
                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                 /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
79 c 89 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from patent US
                                                                                                      . 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35.2%;
98.9%;
                                              35
98
                                            . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 270.2; DB 6
Pred. No. 3.2e-58;
0; Mismatches 3
                                    Score 270.2; DB 6; Pred. No. 3.2e-58; D; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486 bp
5496934.
                                                                                                                                                                                                                    486 bp
5670623.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     194
                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , м.
А.
                                                                                   d
                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  binding
                                                                                                                                 doma in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                               and Doi,R.H
ain proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                     Indels
                                                      Length
                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                        486;
                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-OCT-1996
                                                                                                                                                                                                                              29-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                       292
                                                                                                                                                                                                                                                                                                                                                                                             352
                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

рь

```
REFERENCE
                      SOURCE
ORGANISM
                                                          RESULT 13
I88789
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
166615/c
LOCUS
                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                          밁
                                                                                                                                         δÃ
                                                                                                                                                            В
                                                                                                                                                                          Q
                                                                                                                                                                                                Ъ
                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맜
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                          Best Lo
                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                        471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                    411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                          231
                                                                                                                                           241
                                                                                                                                                              291
                                                                                                                                                                              181
                                                                                                                                                                                                 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                      GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                    TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA 240
                                                                                                                                                                                                          TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAGCCCAACATCAACCTATGATACATATGTTGA 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                          GCAAGCCCAACATCAACCTATGATACATATGTTGA
                                                                                                                                            GCAAGCCCAACATCAACCTATGATACATATCTGGA 275
                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 352
                                                                                                                                                                                                                                            ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                             TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                 TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                          al Similarity
272; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
166615
166615.1
                                                          Sequence
188789
                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 486)
Shoseyov,O., Shpieg1,I., Goldstein,M.A. and Doi,R.H.
Methods of use of cellulose binding domain proteins
Patent: US 5670623-A 3 23-SEP-1997;
Location/Qualifiers
1. .486
              Unclassified
                      Unknown
                                Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                              Unclassified
                                                  I88789
                                                                             I88789
     (bases 1 to
                                                                                                                                                                                                                                                                                                                                                       124
                                                                                                                                                                                                                                                                                                           Conservative
                                                  ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w
                                                                    1 from
                                                                                                                                                                                                                                                                                                                                                       /organism="unknown"
79 c 89 g
                                                  GI:3408729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from patent US
                                                                                                                                                                                                                                                                                                                  35.2%;
     486)
                                                                    patent
                                                                                                                                                                                                                                                                                                          Score 270.2; DB 6
Pred. No. 3.2e-58;
0; Mismatches 3
                                                                    SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    486 bp
S 5670623.
                                                                    486 bp
s 5719044.
                                                                                                                                                                                                                                                                                                                                                       194
                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                              DNA
                                                                                                                                                                                                                                                                                                                            DB 6;
                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                             Length 486;
                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                              Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAT 29-DEC-1997
                                                                              PAT
                                                                                                                                                                                                                                                                                                           0,
                                                                               10-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                               RESULT 14
188790/c
                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                     DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                       QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
       멍
                      QУ
                                           B
                                                           QУ
                                                                               DЬ
                                                                                               Qy
                                                                                                                  Ъ
                                                                                                                                  29
                                                                                                                                                                                                                                                                                                                                                                                    Dр
                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                      Matches
                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
        291
                        181
                                            351
                                                             121
                                                                                                                  471
                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                61
                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194
                                                                                                                                                                                                   124
```

```
Local Similarity
nes 272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA 180
                                                                     ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                      GCAAGCCCAACATCAACCTATGATACATATCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                      al Similarity
272; Conserv
                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3
I88790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shoseyov,O., Shpiegl,I., Goldstein,M.A. Cellulose binding domain fusion proteins Patent: US 5719044 A 1 17-FEB-1998;
                                                                                                                                                                                                                                                       Shoseyov,O., Shpiegl,I., Goldstein,M.A. and
Cellulose binding domain fusion proteins
Patent: US 5719044-A 3 17-FEB-1998;
Location/Qualifiers
1. 486
                                                                                                                                                                                                                                                                                                                             Unknown.
Unclassified
                                                                                                                                                                                                                                                                                                                                                        Unknown.
                                                                                                                                                                                                                                                                                                                                                                               188790.1
                                                                                                                                                                                                                                                                                                                    (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                /organism="unknown"
79 c 89 g
                                                                                                                                                                                                                                                                                                                   1 to 486)
                                                                                                                                                                                                                                                                                                                                                                                                    from patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35.2%;
                                                                                                                                                                                   98
                                                                                                                                                                                . 2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                       0,
                                                                                                                                                                      Score 270.2; DB 6;
Pred. No. 3.2e-58;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 270.2; DB 6;
Pred. No. 3.2e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                       486 bp
5719044.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   +
                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                              6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                          Doi, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486;
                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                     10-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                         412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75
  240
                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                          292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                        0
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                  В
                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
AR096204
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
Search completed: October 27, 2002, 17:46:49 Job time: 1495.36 secs
                                       밁
                                                        Š
                                                                            밁
                                                                                             Ş
                                                                                                                                                         В
                                                                                                                                                                        δÃ
                                                                                                                                                                                              망
                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                  Query Match 35.2%; Score 270.2; DB 6; Length 499; Best Local Similarity 98.9%; Pred. No. 3.3e-58; Matches 272; Conservative 0; Mismatches 3; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201
                                                                                                 181
                                                                                                                                                         81
                                                                                                                                                                            61
                                                                                                                                                                                              ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT 120
                                                                                                                                                                                                                                                                                                                                                                           Unknown.
Unknown.
                                                                                                                                                                                                                                                                                                      1 (bases 1 to 499)
Shoseyov,O. and Shani,Z.
Arabidopsis thaliana endo-1,4-.beta.-glucanase gene and promoter
Patent: US 6005092-A 5 21-DEC-1999;
Location/Qualifiers
1. .499
                                                                                                                                                                                                                                                                                                                                                                                                                AR096204 499 bp
Sequence 5 from patent US 6005092.
AR096204
                                                                                                                                                                                                                                                                                                                                                                                                       AR096204.1 GI:10024795
                                                                                                                                                                                                                                                                                                                                                                Unclassified.
                                                                                                                                                                                                                                                                                     197 a
                                                                                                                                                                                                                                                                                   /organism="unknown"
93 c 82 g
                                                                                                                                                                                                                                                                                     127 t
                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                    Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                      PAT 08-SEP-2000
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                    0;
```

THIS PAGE BLANK (USPTO)

Þ

BF109466 7152d12.x

AT559589 tq50h10.x
AV763598 AV763598
AW763798 AV763598
AW068733 cn24c11.x
BM309775 sak66e03.
A1478023 fb50d08.x
AI678459 tu82f07.x
BM381932 MEST542-A
BM381932 MEST542-A
BM381932 MEST147-F
BG924401 HNC26-1-1
BH381604 AG-ND-132
AI267409 aq64e09.x
BH151293 602917270
AM167360 xg74h05.x
BM35033 MEST264-C
BI868632 60399555
BH524872 BOGFY559F
BH524872 BOGFY559F
BH524872 BOGFY559F
AU13571
AL303076 Tetraodon
BG715056 602673281

AV214643 AV214643 AL088814 Arabidops BH395820 AG-ND-119 AW588379 pa12d10.y

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum
Maximum
                                                                                                                                                                             Result
                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 on:
                                                                                                                                                                                                                Pred. No.
score grea
and is der
                                                                                                                                                                                                                                                                                                                                                                                                                                            08
80
                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                           seq
                                                                                                                                                                                                                No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
 length: 0
length: 2000000000
                                                                                                                                                                    Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-677-374-5
768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           October 27, 2002, 20:15:49 ; Search time 1538.65 Seconds (without alignments) 6736.842 Million cell updates.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13736207 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 atgtcagttgaattctacaa...
                                                                                                                                                                                                                                                                                                                                                                                                        EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                em_estpl:*
em_estro:*
em_htc:*
gb_estl:*
gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                   gb_gss:*
em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                         em_estov:*
                                                                                                                                                                                                                                                                                                                                                                  em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                          em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                     em_esthum: *
                                                                                                                                                                                                                                                                                                                                                                                              em_estba:*
                                                                                                                                                                    Length
709
391
516
717
717
717
719
1190
1191
1237
2237
2237
2335
3335
3335
3336
3336
                                                                                                                                                                     DB
                                     12
12
10
10
10
10
10
10
10
  10
10
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6748477542
         AV760726
AQ252889
2 AQ518147
0 BE552389
0 BI186311
0 BE247681
12 FR0011976
AW661978
0 BF803772
0 AP90847
0 AP90847
1182462
0 AI182462
0 BE51829
0 BE51829
0 BE51829
0 BE51829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chosen
                                                                                                                                                                    IJ
                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27472414
       AV760726 AV760726
AV760726 AV760726
AQ252889 HS_3029_A
AQ518147 HS_5090_A
BE532389 601233730
BI183311 UNL-p-FN-
BE247681 TCBAp2E3
AL003232 F. rubripe
AW661078 h117h11.x
BFB03712 CM0-C1013
AA909847 ol01g10.s
Z44341 HSC1YD071 n
AI817750 WA25099.x
AI182462 uc26h10.r
D51829 HUW053G028
BE246888 TCBAp1E57
T51729 yb28d01.r1
T51729 yb28d01.1
AA825376 oc37h09
                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cell updates/sec
                                                                                                                                                                                             TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                            DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                       RESULT 1
AV760726
                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                     00000
Query Match
                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                     Gu,Y., Li,N., Qian,B., Liu,F., Qu,J., Gao,X., Cheng,Z., Xu,Z., Zeng,L., Xu,S., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong,M., Lu,G., Yang,Y., Gao,G., Zhang,O., Chen,S., Han,Z. and Chen,Z. Homo sapiens cDNA MDS clones

AL Unpublished (2000)

Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
701203, P. R. China
Tel: 86-21-50801919(ex.45)
Fax: 86-21-50801919(ex.45)
Fax: hanzg@chgc.sh.cn
                                                                                                                                                                                                                                                                                                                   AV760726 MDS
AV760726 MDS
AV760726
AV760726.1
                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 709)
                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                            EST
                                                                                                                                                                                                                                                                                                   numan.
                            172
                                                                                                                  1: hanzg@chgc.sh.cn
clone is available at CHGC
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                          MDS
                        /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="MDSAJE03"
/clone_lib="MDS"
/tissue_type="MDS"
/tissue_type="Bone marrow"
/cell_type="CD34" hematopoietic stem/progenitor cell"
/lab_host="MM25.8"
/note="Vector: pTriplEx2; Site_1: sfiIA; Site_2: sfiIB
159 c 188 g 190 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                   744
816
846
892
919
2405
2405
                                                                                                                                                                                                                                                                                                                     GI:10918574
                                                                                                                                                                                                                                                                                                                                     709 bp mrNA linear EST 19-OCT-2000 Homo sapiens cDNA clone MDSAJE03 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
9
10
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
10
10
10
10
10
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D BF109466
AV7535989
AV7635989
AV7635989
AW068733
BM309775
AI478023
AI678459
AW6873152
AW637152
AW637152
BM335231
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
BH38167409
                                                                                                                                                                                                                                                                                                                                                                                                                                                    N B1667298
AU135371
CNS04QUJ
BG715056
AV214643
Score 22;
                                                                                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                                                                               in Shanghai.
DB
                            Site_1: sfiIA; Site_2: sfiIB"
9
Length 709
```

0 0

იიი

C

ဂ

밁 Qy

```
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AQ252889/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Loc
Matches
                                                                                                                                                                                                                           RESULT 3
AQ518147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                    LOCUS
DEFINITION
REFERENCE
                                                                                                        KEYWORDS
                                                                                                                                                ACCESSION
                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                    29 AATCAGCACAAACAAACTCAA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAACTTTCTGGTGTGACCAT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAACTTTCTGGTGTGACCAT 168
                                                                                                                                                                                                                                                                                                              AATCAGCACAAACAAACTCAA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUADANNY AND ALINEAR GSS 10-OCT-1998
HS_3029_A2_D03_MR CIT Approved Human Genomic Sperm Library D Homo
sapiens genomic clone Plate=3029 Col=6 Row=G, DNA sequence.
A0252889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 100
22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High Throughput Sequencing Center University of Washington 401 Queen Anne Avenue North, Seattle, WA 98109, Tel: (206) 616-3618 Fax: (206) 616-3887 Email: jwallace@u.washington.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence-tagged connectors: A sequence approach to mapping scanning the human genome Proc. Natl. Acad. Sci. U. S. A. 96 (17), 9739-9744 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 391)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Mahairas GG, Wallace JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T., Keller,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AQ252889.1 GI:3723803
                                                                                                                                            AQ518147

516 bp DNA linear GSS 05-MAY HS_5090_A1_F08_T7A RPCI-11 Human Male BAC Library Homo sapiens genomic clone Plate=666 Col=15 Row-K, DNA sequence.

AQ518147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                           Homo sapiens
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                            GSS
                                                                                                                             AQ518147.1
                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                       numan.
      (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                quality sequence stop: 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tagged Connector
D29 row: G column: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Organ: sperm; Vector: pBeloBAC11; BAC Clones in E-Coli DH10B" 73 c 85 g 156 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="plate=3029 Col=6 Row=G"
/clone_lib="CIT Approved Human Genomic Sperm Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /sex="male"
        Eutheria;
1 to 516)
                                                                                                                               GI:4743329
                                                                                                                                                                                                                                                                                                                                                                                                                2.7%; Score 21;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 1.; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.5;
                                                                                                                                                                                                                                                                                                                                                                                                                  DB 12; Length 391; 4.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hood L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                  GSS 05-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                    JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
BE532389
                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 GCCTGCAGGGCAGCTCTCTG 315
              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 21 (bases 1 to 717)

NIH-MGC http://mgc.nci.nih.gov/.

NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC) National Institutes of Health, Mammalian Gene Collection (MGC) National Institutes of Health, Mammalian Gene Collection (MGC) National Institutes of Health, Mammalian Gene Collection (MGC) National Institutes of Health, Mammalian Gene Collection (MGC) National Institutes of Health, Mammalian Gene Collection (MGC) National Institution Information (MGC) National Institution Information Collection distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: jwallace@u.washington.edu
Clones are derived from the human BAC library RPCI-11. For BAC
Clones are derived from the human BAC library RPCI-11. For BAC
library availability, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://bacpac.med.buffalo.edu/ordering_bac.htm)
or from Resear h Genetics (info@resgen.com). BAC end Web Server:
http://www.htsc.washington.edu
Plate: 666 row: K column: 15
Seq primer: T7
Class. no. ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proc. Natl. Acad. SCI. V. Proc. Natl. Acad. SCI. V. P. 99380589

Contact: Mahairas GG, Wallace JC, High Throughput Sequencing Center University of Washington University of Washington Verb. Seati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       401 Queen Anne Avenue North, Seattle, Tel: (206) 616-3618
Fax: (206) 616-3887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               scanning the human genome Proc. Natl. Acad. Sci. U. S. A. 96 (17), 9739-9744 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence-tagged connectors: A sequence approach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T., Keller,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 516.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE532389
601233730F1 NCI_CGAP_Mam6
                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
BE532389
                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                          BE532389.1
                                                                                                                                                                                                                                                                                                                                                      nouse mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pBACe3.6; Site_1: EcoRI; Site_2: EcoRI; Male blood DNA was isolated from one randomly chosen donor and partially digested with a combination of EcoRI and EcoRI Methylase. Size selected DNA was cloned into the pBACe3.6 vector at EcoRI sites"

a 156 c 129 g 104 t 5 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="Plate=666 Col=15 ROW=K"
/clone_lib="RPCI-11 Human Male BAC Library"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                               GI:9761034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        717 bp mRNA linear EST 09-AUG-2
Mus musculus cDNA clone IMAGE:3597462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 12;
17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ноод Г
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WA 98109,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ť
```

Š

밁

Euteleostomi;

EST 09-AUG-2000

0

0;

Ų

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
BI186311/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 462 ACAAATCAGCACAAACAAAC 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAATCAGCACAAACAAAC 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 823)
Caetano, A.R., Johnson, R.K. and Pomp, D.
Caetanon and sequence characterization of a normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI186311 823 bp mRNA linear EST: UNL-P-FN-cf-b-07-0-UNL.S2 UNL-P-FN Sus scrofa cDNA clone UNL-P-FN-cf-b-07-0-UNL 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                  Email: dpomp@unl.edu
Oligo-dT track not found, Not I si
is likely internal to the message.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Pomp, D
Department of Animal Science
University of Nebraska, Linco
                                                                                                                                                                                                                                                                                                                                                                                                                                 Lincoln, NE 68583-0908,
Tel: 402 472 6416
Fax: 402 472 6362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sus scrofa
                                                                                                                                                                                                                                                                                                                                                     Seq primer: M13 -29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plate: LLAM8776 row: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               library from swine ovarian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
/lab_host="DH108" (Life Technologies)"
/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
/note="Vector: pT7T3D-Pac (Pharmacia) with a modified
polylinker; Site_1: Not I; Site_2: ECO RI; The UNL-P-FN
library is a normalized library representing portione
ovarian follicles, ranging between 2.0 to 10.0 mm in
diameter, collected during 7 days of the follicular phase
of the pig estrous cycle. This library was derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigator providing samples: Jeffrey Green, M.D., NIH" 152 c 150 g 187 t
                                                                                                                                                                  /clone="UNL-P-FN-cf-b-07-0-UNL"
/clone_lib="UNL-P-FN"
                                                                                                                                                                                                                             Lines"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="NCI_CGAP_Mam6"
/sex="female, virgin"
/tissue="pe="infiltrating ductal carcinoma"
/dev_stage="5 months"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:10090"
/clone="IMAGE:3597462"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Mus musculus"
/strain="FVB/N"
                                                                                                                                                 /dev_stage="ADULT"
                                                                                                                                                                                                          /db_xref="taxon:9823"
                                                                                                                                                                                                                                            /organism="Sus scrofa"
/strain="University of Nebraska, Lincoln
                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metazoa; Chordata; Craniata; Vertebrata;
Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:14660720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 20;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lincoln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    column: 07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             Not I site shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 follicles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 717;
                                                                                                                                                                                                                                                                                                                                                                                         in beginning of sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                Swine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 10-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                Selection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE247681/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               293 GTTGCCTGCAGGGCAGCTCT 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Citation: Carninci, P. and full-length cDNA cloning.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2000)
Contact: Dr. Judith F. Margolin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wei,Y., Tsang,Y.T.M., Mei,G., Ku,J.M., Ali-Osman Jr.,F.R., Muzny,D., Bouck,J., Gibbs,R.A. and Margolin,J.F.
Pediatric Leukemia cDNA Sequencing Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BE247681 .184 bp mRNA linear EST 03-OCT-20
TCBAP2E5356 Pediatric pre-B cell acute lymphoblastic leukemia
Baylor-HGSC project=TCBA Homo sapiens cDNA clone TCBAP5356, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: M13 primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: clones@txccc.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    at Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE247681.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE247681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Texas Children's Cancer Center and Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 184)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     832-825-4038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bates, MC3-3320 Houston,
                                    First strand cDNA was primed with an anchored XhoI-oligo(dT) primer [5'GGAGGACTCGAGGGGCGCAGGAGGAG(T)VN 3'; V=A,C,G; T] and then dG tailed. Second strand was primed with a BamHI-dC primer [5'AGAGAGCTCGCGCATAATAATACT(C) 3']. Double-stranded cDNA was then digested with BamHI and XhoI and directionally cloned into the BamHI and SalI sites of lambda pSB vector. Library went through one round of normalization. Library was constructed by Wei Yu at RIKEN of Japan (Carninci P, Westover A, Nishiyama Y, Ohsumi T, Itoh M, Nagaoka S, Sasakin, Okazaki Y, Muramatsu M, Schneider C, Hayashizaki Y, High efficiency selection of fullloath Chan but interced the first transcript the description of fullloath chan but interced to the contraction of fullloath chan be interced.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAG_SEQ=None found"
3 272 c 231 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    by Bonaldo, Lennon and Soares,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the library UNL-P-F2. The tag is a string of nucleotides present between the Not I site an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              oligo-dT track. The library was constructed as
full-length cDNA by improved biotinylated cap trapper.,
DNA Res 4: 1, 61-6, Feb 28, 1997)*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                /dev_stage="pediatric 2 years"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="leukopheresis"
                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="TCBAP5356"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                            /note="Vector: lambda pSB; Site_1: BamHI; Site_2: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                   /cell_type="pre-B cell"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       leukemia Baylor-HGSC project=TCBA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="Pediatric pre-B cell acute lymphoblastic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:9099528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.6%; Score 20; DB
100.0%; Pred. No. 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashizaki,Y. High efficiency Methods Enzymol. 303, 19-44 (1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata;
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TX 77030,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s constructed as described Genome Research 6: 791-806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 03-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

information can

be

```
RESULT 8
AW661978
 JOURNAL
                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                SOURCE
                                                                                                                                            KEYWORDS
                                                                                                                                                                VERSION
                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
FR0011976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Locus
                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                        119
                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                                    CAGGGCAGCTCTCTGATCA 319
                                                                                                                                                                                                                                                                                                                   CAGGGCAGCTCTCTGATCA 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGTGATTTAAATTTAAA 13
 Unpublished (1997)
                       NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                              Homo sapiens
                                                                                                                                               EST
                                                                                                                                                                             sequence.
AW661978
                                                                                                                                                                                                      hi17h11.x1 NCI_CGAP_GU1 Homo similar to contains element ?
                                                                                                                                                             AW661978.1
                                                                                                                                                                                                                                         AW661978
                                                                                                                                numan
                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           One
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vector: m13mp18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Centre Hinxton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (09-SEP-1997) MRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tetraodontidae: Takifugu.

1 (bases 1 to 190)
Elgar,G., Clark,M., Smith,S.,
Williams,G. and Brenner,S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Takifugu rubripes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL003232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F.rubripes GSS sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL003232.1 GI:2448802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FR0011976
                                                               (bases 1 to 191)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pass dye-terminator sequencing of cosmid
                  Gene Index
                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                               56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genome survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                               מ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            /Organism="Takifugu rubripes"
/db_xref="taxon:31033"
/clone_lib="cosmid 072L05"
/clone="072L05aE5"
38 c 40 g 56 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                           GI:7454514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cambridge,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                        element TARI
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                              Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30
                                                                                                                                                                                                                                    191
                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CB10
                                                                                                                                                                                                                     . bp mR
sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human Genome Mapping Project Resource
CB10 1SB. Email: biohelp@hgmp.mrc.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Meek,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        072L05aE5,
                                                                                                                                                                                                                                                                                                                                                                                           DB
50;
                                                                                                                                                                                                      repetitive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
49;
                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                  cDNA clone IMAGE:2972613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Warner, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                          Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genomic
                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U
                                                                                                                                                                                                 element ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cloned genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Umrania,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 survey sequence.
                                                                                                                                                                                                                               EST 06-APR-2000
                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS 18-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 9
BF803712
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=CMO&t2=CMO-CIO136-021100-670-dl1&t3=2000-11-02&t4=1)
Seq primer: puc 18 forward
                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 210)

Dias Neto, E., García Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagai, M.A., da Silva, W. Jr., 2ago, M.A., Bordin, S., Costa, F.F., Coldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., García, A., deOliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                               Tel: +55-11-2704922
Fax: +55-11-2707001
                                                                                                                                Brazi
                                                                                                                                            Rua Prof. Antonio Prudente
                                                                                                                                                        Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
                                                                                                                                                                                            Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CMO-CIOI36-021100-670-d11 CIO136 Homo sapiens cDNA, BF803712
BF803712 GI:12132701
                                                                            Email: asimpson@ludwig.org.br
                                                                                                                                                                                                                                         sequence
                                                                                                                                                                                                                                                                       Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genome Sequencing Center
Clone distribution: WCI-CGAP clone distribution
found through the I.M.A.G.E. Consortium/LLNL at:
image.llnl.gov/image/html/iresources.shtml
Seq primer: -400P from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
Email: cgapbs-remail.nih.gov
Tissue Procurement: Chris Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D. cDNA Library Preparation: Life
Technologies, Inc. cDNA Library Arrayed by: Christa Prange, The
I.M.A.G.E. Consortium DNA Sequencing by: Washington University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 157.
                                                                                                                                                                                                                         Natl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon.9606"
/clone="IMAGE:2972613"
/clone_lib="NCI_CGAP_GUI"
/tissue_type="2 pooled high-grade transitional cell tumors"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Organ: genitourinary tract; Vector: pCMV-SPOR Site_1: Sall; Site_2: Not1; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies."

Technologies."

32 c 35 g 54 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
                                                                                                                                                                                                                       Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                        109, 4 andar, 01509-010,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                                                                                                                                                                         97
                                                                                                                                                                                                                       (7),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
50;
```

9;

Length 191; Indels

PCMV-SPORT6;

0;

0;

Gaps

0;

mRNA sequence. EST 12-JAN-2001

3491-3496 (2000)

Sao

Paulo-SP,

ŧ,

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
AA909847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGTGATTTAAATTTAAA 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ol01g10.sl NCI_CGAP_Lu5 mRNA sequence. AA909847
                                                                                                                                                                                                                                                                                                                                                        CDNA Library Preparation: M. Bento Soares, Ph.D.
CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 528 Std Error: 0.00
Seq primer: -40ml3 fwd. ET from Amersham
High quality sequence stop: 210.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA909847.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 237)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         quality sequence stop: 210.
91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:1522242"
/clone_lib="NCI_CGAP_Lu5"
/tissue_type="carcinoid"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note-"Organ: colon_ins; Vector: puc18; Site_1: SmaI; Site_2: SmaI, A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
                                 modified polylinker; lst strand cDNA was prepared from modified polylinker; lst strand cDNA was prepared from neuroendocrine lung carcinoid, and was then primed with a Not I - oligo(dT) primer. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library is normalized, Library was
constructed by Bento Soares and M. Fatima 41\ c 42\ g 63\ t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="CI0136"
                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:3047549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens cDNA clone IMAGE:1522242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 26-AUG-1998
3E:1522242 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Michael R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
Z44341/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
   В
                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                             Matches
                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
   209
                                                                83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
nes 19; Conserv
1 Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Auffray,C., Behar,G., Bois,F., Bouchier,C., da Silva,C., Devignes,M.D., Duprat,S., Houlgatte,R., Jumeau,M.N., Lamy,B., Lorenzo,F., Mitchell,H., Mariage-Samson,R., Pletu,G., Poullot,Y., Sebastiani-Kabaktchis,C. and Tessier,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genexpress_library_idt: C; Genexpress_sequence_idt: y1c-lyd07
Seq primer: (-21)M13_universal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: genexpress@genethon.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genethon Centre de recherche sur le Genome Humain
1,rue de l'Internationale, BP60 91002 EVRY Cedex, FRANCE
Tel: 33169472800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genexpress-Genethon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Genethon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95277534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and its expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IMAGE: molecular integration of the analysis of the human genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 265)
Auffray, C., Behar, G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z44341.1 GI:573469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z44341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSC1YD071 normalized infant brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Single read
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33160778698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                76
                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acad.
                                                                                                                                                                                                                                                                                      isolate=muscular atrophy patient; tissue_type=total brain; total mRNA was oligo-(dT) primed and directionally cloned 5′ -> 3′ into the HindIII -> NotI sites of the lafmid BA vector. Clone library from B.Soares, Psychiatry Dept. Columbia University, USA. Normalization_method: Bento Soares, P.N.A.S in press*

43 c 48 g 89 t 9 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="total brain"
/dev_stage="3 months old"
/dev_stage="3 months old"
/note="Organ: brain; Vector: lafmid BA; Site_1: HindIII;
/note="Organ: brain; Vector: lafmid BA; Site_1: HindIII;
/note="Organ: brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vector: total brain; Vecto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="c-lyd07"
/clone_lib="normalized infant brain cDNA"
/sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sci.
                                                                                                                                                               2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  III,
                                                                                                                                                               Score 19;
; Pred. No.
                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sci. Vie 318 (2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                            DB 10;
. 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA Homo sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      263-272 (1995)
                                                                                                                                                                                          Length 265;
                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 14-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                 0
                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                    9
```

```
,
                                                                                                                                                                                                                                        AI182462/c
LOCUS
                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                 KEYWORDS
                                                                                                                                                                      VERSION
                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                           RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                               36
                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity tes 19; Conserv
                                                                                                                                                                                                                                                                                                                                                           83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                           ACAGTGATTTAAATTTAAA 54
Mus musculus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus 1 (bases 1 to 32)

Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T Geisel, S., Kucaba, T., Lacy, M., Le, M., Martin, J., Morris, M.,
                                                                                                                                                                uc26h10.rl Soares_mammary_gland_NbMMG Mus musculus mAGE:1399171 5', mRNA sequence.
AI182462.
AI182462.1 GI:3733100
                                                                                                                                 house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCI/NINDS-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute / National Institute of t
Disorders and Stroke, Brain Tumor Genome Anatomy Pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           www-bio.llnl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA Library Arrayed by: Greg Lennon, Ph.D.

DNA Sequencing by: Washington University Genome Sequencing Cente
Clone distribution: NCI-CGAP clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue Procurement: David N. Louis, M.D., Myrna R. Rosenfeld M.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CGAP/BTGAP), Tumor Gene Index Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AI817750.1 GI:5436829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
AI817750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wk25g09.x1 NCI_CGAP_Brn25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Insert Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA Library Preparation: M. Bento Soares, Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 283)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 adaptors (Pharmacia), digested with Not I the Not I and Eco RI sites of the modified Library is normalized, and was constructed Soares and M.Fatima Bonaldo."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:9606"
/clone="IMAGE:2413408"
/clone_lib="NCI_CGAP_Brn25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="anaplastic oligodendroglioma"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -40UP from Gibco.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .gov/bbrp/image/image.html
h: 346 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                 2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               double-stranded cDNA was ligated to Eco RI s (Pharmacia), digested with Not I and cloned into I and Eco RI sites of the modified pT7T3 vector. is normalized, and was constructed by Bento
                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                p mkNA linear EST 21-DEC-1999
sapiens cDNA clone IMAGE:2413408 3',
                                                                                                                                                                                                                                                                                                                                                                                                               DB 9;
53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genome Anatomy Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 283;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hominidae;
                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing Center
                                                                                                                                                                                                              EST 08-OCT-1998
CDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Neurological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fatima
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                  D51829/c
                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                 D51829.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGI:910887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47
           Pharmaceutical Co., Ltd
```

```
135 TGGTACACAAGGACAAACT 153
                                          Fujiwara,T., Hirano,H., Katagiri,T., Kawai,A., Kuga,Y., Nagata,M. Okuno,S., Ozaki,K., Shimizu,F., Shimada,Y., Shinomiya,H., Takaich,A., Takeda,S., Watanabe,T., Takahashi,E., Hirai,Y., Maekawa,H., Shin,S. and Nakamura,Y.
Fujiwara et al. (1995)
Unpublished (1995)
                                                                                                                                                                                                                                                                                                                                                HUM053G02B Clontech human fetal brain polyA+ mRNA (#6535) Homo sapiens cDNA clone GEN-053G02 5', mRNA sequence.
                       Contact: Tsutomu Fujiwara
                                                                                                                                                                                Mammalia; Eutheria; Primates; 1 (bases 1 to 335)
                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: -28ml3 rev2 ET from Amersham High quality sequence stop: 303. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: mouseest@watson.wustl.edu
This clone is available royalty-free th
IMAGE Consortium (info@image.lln1.gov)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schellenberg,K., Steptc
Theising,B., Wylie,T.,
Waterston,R.
The WashU-HHMI Mouse ES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Marra M/Mouse EST Project
WashU-HHMI Mouse EST Project
Washington University School of MedicineP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Forest Park Parkway, Box 8501,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
  GEN Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                adaptors (Pharmacia), digested the Not I and Eco RI sites of t RNA provided by Dr. Minoru Ko, W constructed and normalized by Be Bonaldo."

95 g 79 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
/Strain="C57BL/6J"
/db_xref="faxon:10090"
/clone="IMAGE:1399171"
/clone=11b="Soares_mammary_gland_NbMMG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RI; 1st strand cDNA was primer [5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Organ: mammary gland; Vector: pT7T3D-Pac (Pharmacia ) with a modified polylinker; Site_1: Not I; Site_2: Eco I; Ist strand cDNA was primed with a Not I - oligo(dT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="mammary gland"
/dev_stage="4 weeks"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              double-stranded cDNA was ligated to Eco RI
's (Pharmacia), digested with Not I and cloned into
I and Eco RI sites of the modified pT7T3 vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Steptoe,M., Tan,F., Underwood,K., Moore,B., ie,T., Lennon,G., Soares,B., Wilson,R. and
Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             through LLNL; contact the v) for further information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Wayne State
Bento Soares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Univ. Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

ů

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
BE246888/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95 ACAGTGATTTAAATTTAAA 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83 ACAGTGATTTAAATTTAAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 2.5%;
l Similarity 100.0%;
19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Citation: Carninci,P. and Hayashizaki,Y. High efficiency full-length cDNA cloning. Methods Enzymol. 303, 19-44 (1999) Seq primer: M13 primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 33b)
Wei,Y., Tsang,Y.T.M., Mei,G., Ku,J.M., Ali-Osman
Wei,Y., Gibbs,R.A. and Margolin,J.F.
, Bouck,J., Gibbs,R.A. Sequencing Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 336)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE246888 336 bp mRNA linear EST 03-OCT-2
TCBAP1E5756 Pediatric pre-B cell acute lymphoblastic leukemia
Baylor-HGSC project=TCBA Homo sapiens cDNA clone TCBAP5756; mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Texas Children's Cancer Center and Human Genome Sequencing Center at Baylor College of Medicine 1102 Bates, MC3-3320 Houston, TX 77030, USA Tel: 832-824-4536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2000)
Contact: Dr. Judith F. Margolin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           463-10 kagasuno Kawauchi-cho, Tokushima, Tokushima, 771-01 Japan
Tel: 0886-65-2888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fax: 832-825-4038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fax: 0886-37-1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: clones@txccc.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE246888.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE246888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             numan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
/note="Vector: lambda pSB; Site_1: BamHI; Site_2: EcoRI; /note="Vector: lambda pSB; Site_1: BamHI; Site_2: EcoRI; First strand cDNA was primed with an anchored xhor-oligo(dT) primer [5'GAGAGGGCGCGCAGGAGGAGGAGT)VN 3'; V=A,C,G; N=A,C,G,T] and then dG tailed. Second strand was primed with a BamH1-dC primer [5'AGAGAGCTCGGAGTCGGGGCGCGCAATAATAATAAT(C) 3']. Double-stranded cDNA was then digested with BamH1 and xhoI and directionally cloned into the BamH1 and salI sites of lambda pSB vector. Library was constructed by Wei Yu at RIKEN of Japan (Carninci P, Westover A, Nishiyama Y, Ohsumi T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="GEN-053G02"
/clone_lib="Clontech human fetal brain polyA+ mRNA (#6535
                                                                                                                                                                                                                                                     /tissue_type="leukopheresis"
/cell_type="pre-B cell"
/dev_stage="pediatric 2 years"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                        /clone="TCBAP5756"
/clone_lib="Pediatric pre-B cell acute lymphoblastic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
1. .335
                                                                                                                                                                                                                                                                                                                                                /sex="male"
                                                                                                                                                                                                                                                                                                                                                                     leukemia Baylor-HGSC project-TCBA"
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:9098639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10; Length 335; 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jr., F.R., Muzny, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 03-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
BASE COUNT
ORIGIN
                       99
                       D
              Itch M, Nagaoka S, SasakiN, Okazaki Y, Muramatsu M, Schneider C, Hayashizaki Y, High efficiency selection of full-length cDNA by improved biotinylated cap trapper., DNA Res 4: 1.61-6, Feb 28, 1997)
```

Qy Query Match
Best Local Similarity
Matches 19; Conserv Conservative 2.5%; 0; Score 19; Pred. No. Mismatches DB 10; Length 336; 55; Indels 0; Gaps

0

Search completed: October 27, 2002, 22:36:47 Job time: 1544.65 secs

g

밁 ş

THIS PAGE BLANK (USPTO)

Ņ.

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                October 27, 2002, 20:19:49; Search time 57.0363 Seconds (without alignments) 3307.484 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383533 seqs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-677-374-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                1482
1482
3808
3808
3808
3808
3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB
                                                            US-09-198-955A-11

US-08-916-917-3

US-08-972-631-3

US-08-972-630-3

US-08-972-630-3

US-08-672-211-3
                                                                                                                                                                                                                         US-08-330-394A-1
US-08-330-394A-3
US-09-006-636-5
                                                                                                                                                                                                                                                                                                                         US-08-048-164A-1
US-08-048-164A-3
US-08-460-462-1
US-08-460-462-3
US-08-460-457-1
US-08-460-457-1
US-08-460-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chosen parameters:
                                                                                                                                                                                                                                                                            US-08-460-458-3
US-08-460-455-1
US-08-460-455-3
                                                                                                                                                                            US-09-006-632-5
US-09-277-716-21
US-08-330-394A-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       767066
                                                                                                            Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                           sequence
sequence
sequence
sequence
sequence
sequence
sequence
                                                                                                                                                                                                                           Sequence
Sequence
Sequence !
                                Sequence
Sequence
                                                                             Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
             1, Appli
1, Appli
1, Appli
3, Appli
3, Appli
1, Appli
1, Appli
1, Appli
1, Appli
3, Appli
3, Appli
3, Appli
5, Appli
5, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
9, Appli
3, Appli
Query Match 33.2%; Sometime 100.0%; 18 Matches 255; Conservative 0;
```

28 17 2.2 1384 1 US-09-243-888A-1 30 17 2.2 1384 1 US-08-553-888A-2 31 17 2.2 4982 3 US-08-593-103B-1 32 17 2.2 4982 3 US-08-699-103B-1 33 16 2.1 88 4 US-09-229-059-1 34 16 2.1 707 2 US-08-486-397-37 35 16 2.1 707 2 US-08-486-399-37 36 16 2.1 707 2 US-08-486-399-37 37 16 2.1 707 2 US-08-486-399-37 38 16 2.1 707 2 US-08-486-399-37 39 16 2.1 707 2 US-08-481-37 39 16 2.1 707 3 US-08-494-61-37 40 16 2.1 707 3 US-09-249-471-37 40 16 2.1 707 3 US-09-249-451-37 41 16 2.1 707 3 US-09-249-451-37 42 16 2.1 707 3 US-09-249-451-37 43 16 2.1 707 3 US-09-249-451-37 44 16 2.1 707 3 US-09-249-451-37 45 16 2.1 707 3 US-09-249-448-37 46 16 2.1 707 3 US-09-249-448-37 47 18 2.1 707 3 US-09-249-448-37	17 2.2 1384 4 17 2.2 1466 1 17 2.2 4982 3 17 2.2 4982 4 16 2.1 707 2 16 2.1 707 2 16 2.1 707 2 16 2.1 707 2 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3 16 2.1 707 3
2.2 1384 4 2.2 1466 1 2.2 4982 3 2.2 4982 3 2.1 707 2 2.1 707 2 2.1 707 2 2.1 707 2 2.1 707 3 2.1 707 3 2.1 707 3 2.1 707 3 2.1 707 3 2.1 707 3 2.1 707 3 2.1 707 3	2.2 1384 US-08-53-888A-1 Sequence 2.2 1386 1 US-08-53-888A-1 Sequence 2.2 1466 1 US-08-53-888A-1 Sequence 2.2 4982 3 US-08-229-059-1 2.2 4982 4 US-09-229-059-1 Sequence 2.1 707 2 US-08-465-390-37 Sequence 2.1 707 2 US-08-486-399-37 Sequence 2.1 707 2 US-08-481-37 Sequence 2.1 707 3 US-09-249-471-37 Sequence 2.1 707 3 US-09-249-471-37 Sequence 2.1 707 3 US-09-249-481-37 Sequence
2 1384 4 4 1 2 1466 1 1 2 1466 1 1 2 14982 4 982 4 1 707 2 1 1 707 2 1 1 707 2 1 1 707 2 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707 3 1 1 707	2 1384 1 US-08-553-888A-1 Sequence 2 1466 1 US-08-553-888A-2 Sequence 2 14982 3 US-08-699-103B-1 Sequence 2 4982 4 US-09-29-059-1 Sequence 2 4982 4 US-09-042-071-49 Sequence 2 4982 6 US-09-042-071-49 Sequence 2 1707 2 US-08-465-397-37 Sequence 2 1707 2 US-08-466-399-37 Sequence 2 1707 2 US-08-461-37 Sequence 2 1707 3 US-09-249-471-37 Sequence 2 1707 3 US-09-249-471-37 Sequence 2 1707 3 US-09-249-481-37 Sequence 3 1707 3 US-09-249-481-37 Sequence 3 1707 3 US-09-249-481-37 Sequence 3 1707 3 US-09-249-481-37 Sequence 3 1707 3 US-09-249-481-37 Sequence
4 H H M 4 4 M M M M M M M M M M	1 US-08-553-888A-1 1 US-08-553-888A-1 2 US-08-553-888A-2 3 US-08-553-888A-2 3 US-08-699-103B-1 3 US-08-699-103B-1 4 US-09-229-059-1 4 US-09-042-071-49 5 US-09-445-380-37 5 US-08-486-399-37 5 US-08-486-399-37 6 US-08-486-399-37 7 US-08-486-399-37 7 US-08-486-399-37 7 US-08-634-641-37 7 US-08-634-641-37 7 US-08-634-641-37 8 US-09-249-471-37 8 US-09-249-471-37 8 US-09-249-451-37 8 US-09-249-451-37 8 US-09-249-461-37 8 US-08-858-2077A-210 8 US-08-858-207A-210
1 US-08-553-888A-2 1 US-08-553-888A-2 1 US-08-553-888A-2 1 US-08-553-888A-2 2 US-08-699-103B-1 4 US-09-229-059-1 4 US-09-042-071-49 2 US-08-486-397-37 2 US-08-486-399-37 2 US-08-486-399-37 2 US-08-486-399-37 2 US-08-486-399-37 3 US-09-249-471-37 3 US-09-249-471-37 3 US-09-249-471-37 3 US-09-249-461-37 3 US-09-249-461-37 3 US-09-249-461-37 4 US-08-858-207A-210	553-888A-1 Sequence 553-888A-1 Sequence 553-888A-2 Sequence 599-103B-1 Sequence 229-059-1 Sequence 042-071-49 Sequence 042-071-49 Sequence 0486-397-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 049-471-37 Sequence 049-471-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-481-37 Sequence 049-481-37 Sequence 049-481-37 Sequence
US-08-553-888A-2 US-08-553-888A-2 US-08-553-888A-2 US-08-699-103B-1 US-09-249-059-1 US-09-042-071-49 US-09-042-071-49 US-08-486-397-37 US-08-486-399-37 US-08-486-399-37 US-08-4861-95-37 US-08-4861-95-37 US-09-249-471-37 US-09-249-451-37 US-09-249-451-37 US-09-249-451-37 US-09-249-451-37 US-09-249-461-37 US-09-249-461-37 US-09-249-471-37 US-09-249-471-37 US-09-249-481-37 US-08-809-459-410-37	553-888A-1 Sequence 553-888A-1 Sequence 553-888A-2 Sequence 599-103B-1 Sequence 229-059-1 Sequence 042-071-49 Sequence 042-071-49 Sequence 0486-397-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 0486-399-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-451-37 Sequence 049-481-37 Sequence 049-480-37 Sequence 049-480-37 Sequence 049-480-37 Sequence 049-480-37 Sequence

ALIGNMENTS

```
FEATURE:

NAME/KEY:

LOCATION:

US-08-048-164A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
US-08-048-164A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Applic Patent No. 5496934
                                                                                                                                                                                                                                  SOFTWARE: PATENTIN Release #1.0, Ve CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/048,164A FILING DATE: 14-APR-1993 CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION: 435
ATTORNEY/AGENT INFORMATION: NEGLISTRATION NUMBER: 18,872
REGISTRATION NUMBER: 7809-003
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                   TELEFAX: (212) 869-880
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE & EDMONDS
STREET: 1155 Avenue of the I
                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Goldstei
APPLICANT: Doi, Roy
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Shoseyov, Oded APPLICANT: Shpiegl, Itai
                                                                  MOLECULE TYPE:
                                                                                                                                                   SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 1155 AV
CITY: New York
STATE: New York
                                                                                  STRANDEDNESS:
TOPOLOGY: unl
                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10036
                                                                                                                nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08048164A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                               486 base pairs
                                                                                                                                                                                                    : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Goldstein,
Doi, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                    unknown
                                                                                                   double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CELLULOSE BINDING : 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marc A.
                                                                                                                                                                                                                                                                                                                                                         US/08/048,164A
                                                                                                                                                                                                                                                     7809-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Americas
                                                                                                                                                                                                                                                                                                                                                                                            Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                            #1.25
```

C a

C

000

Score 255; DB 1; L Pred. No. 5.5e-124; 0; Mismatches 0;

Length 486; Indels

٥.

Gaps

0;

75

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
      닭
                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                       US-08-048-164A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-048-164A-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/08048164A Patent No. 5496934
                                                                      Matches
                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Shoseyov, Oded
APPLICANT: Shpiegl, Itai
APPLICANT: Goldstein, Marc A.
                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 780
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEPAX: (212) 869-8864/9741
TELEX: 66141 PENNIE
                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE. CURRENT APPLICATION DATA:
CURRENT APPLICATION NUMBER: US/08/048,164A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Doi, Roy H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
NUMBER OF SEQUENCES: 21
                                                                                                                                                      MOLECULE TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: L. STREET: New York
271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91
                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: 14-APR-CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTATGATACATAT 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                                                                                                                                                                                                                                                                Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
Y: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1155 Avenue of the Americas
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                14-APR-1993
                                                                                    33.2%;
                                                                                                                                                                                                                                                                                                                                              18,872
                                                                     0;
                                                                                    Score 255; DB 1; L; Pred. No. 5.5e-124;
                                                                                                                                                                                                                                                                                                                                    7809-003
                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.25
                                                                        0;
                                                                                                     Length 486
                                                                        Indels
                                                                   0;{ Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90
                                                                        0;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
US-08-460-462-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                 ; LOCATION:
US-08-460-462-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08460462 Patent No. 5670623 GENERAL INFORMATION:
Query Match 33.2
Best Local Similarity 100.
Matches 255; Conservative
                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                 FILLING LASSIFICATION: 435
CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 14-APR-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256 ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          396 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                           LENGTH: 486 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216 ACCTATGATACATAT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: New York
STATE: New York
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                          TELEFHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 0 FILING DATE: 14-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10036
                                                                                                                                                                                                                                                                                                                                           Misrock, S. Leslie
                                                                                                                                                                                                                                                66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Doi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shoseyov, Oded
Shpiegl, Itai
Goldstein, Marc A.
                                                                               1..486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                         concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Roy H.
 100.0%; F
tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METHODS OF USE OF CELLULOSE BINDING DOMAIN PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/460,462
                                                                                                                                                                                                                                                                                                                        18,872
                  Score 255; DB 1; L Pred. No. 5.5e-124;
                                                                                                                                                                                                                                                                                                              7809-006
   Mismatches
   0;
                                 Length 486
     Indels
   0;
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             337
     0
```

20

16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCCAATAATCAAAATTACTAAC 75

Ş

76 31

밁

135

90

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
US-08-460-462-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                 US-08-460-462-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08460462 Patent No. 5670623
                                                  Matches
                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: unknown
                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 780-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 01 FILING DATE: 14-APR-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/460,462
FILING DATE: concurrently herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INVENTION: METHODS OF USE OF CELLULOSE BINDING DOMAIN PROTEINS NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                             TELEFAX: (214, TELEFAX: 66141 PENNIE TELEX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19
16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                 Local
                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACACAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 150
                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10036
                                                                                                                                                                                                                                                                                                                                         Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shoseyov, Oded
Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.A.
                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PENNIE & EDMONDS
                                          33.2%; Scc
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       270
                                                                                                                                                                                                                                                                                                                                                                                          US 08/048,164
                                                                                                                                                                                                                                                                                                                      18,872
                                           Score 255; DB 1; ...

; Pred. No. 5.5e-124; ...
                                                                                                                                                                                                                                                                                                            7809-006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Version #1.25
                                                                               Length 486
                                                Indels
                                                0;
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    210
                                                0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-460-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                       ; NAME/KEY:
; LOCATION:
US-08-460-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08460457 Patent No. 5719044
Query Match
Best Local Similarity
Matches 255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: concurrently herewith CLASSIFICATION: 435
PRIOR APPLICATION DATA: 435
PRIOR APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Lesile
                                                                                                                                                                                                                                     TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Goldstein,
APPLICANT: Doi, Roy H
TITLE OF INVENTION: C
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                             MOLECULE TYPE: DNA FEATURE:
                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1155 AV
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256 ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    276 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     396 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              456 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 18, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: U
ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: PENNIE & LATERIAN STREET: 1155 Avenue of the Americas
                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/460,457
                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTATGATACATAT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                  nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New York
                                                                                                                                                                                                                       486 base pairs
                                                                                                                                                                                                                                                                                           : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shoseyov, Ode
Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goldstein, Marc A
                                                                                                                                                               unknown
                                                                                          1..486
                                                                                                         CDS
               33.2%; Score 255; DB 1; L
100.0%; Pred. No. 5.5e-124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CELLULOSE BINDING DOMAIN FUSION PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Oded
                                                                                                                                                                                                                                                                                                                                                                18,872
                                                                                                                                                                                                                                                                                                                                                    7809-008
                                Length 486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              397
```

Conservative

0;

Mismatches

Indels

0,

```
Ç!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                  ; MOLECULE TYPE: US-08-460-457-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-460-457-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, App...
Sequence 3, App...
Sequence 3, App...
                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. 5719044
GENERAL INFORMATION:
                                     Matches 255;
                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 486 base pairs
                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 780
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNAY, AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Doi, Roy H. TITLE OF INVENTION: CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                    TOPOLOGY: unl
                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: concur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76
16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,8
                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTATGATACATAT 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                   nucleic acid
DEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08460457
                                                                                                                                                                                                                                   66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shoseyov, Oded
Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                                                                                                                                  (212) 869-8864/9741
                                   Conservative
                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                               concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CELLULOSE BINDING DOMAIN FUSION PROTEINS
                                                                     33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/460,457
                                                                                                                                                                                                                                                                                                          18,872
                                                                                                                                                                                                                                                                                                   7809-008
                                   0;
                                                  Score 255;
Pred. No.
                                   Mismatches
                                                  5.5e-124;
                                                                     DB 1;
                                                                Length 486;
                                   Indels
                                   0;
                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                   0
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
US-08-460-458-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вр
                                                            US-08-460-458-1
 Matches
                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08460458 Patent No. 5738984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Shosey
                                                                                                                                                                                           TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: LLLC
STREET: New York
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 14-APR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        456 TACAACTCTAACAAATCAGCACAAACAAACTACATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256 ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   396 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216 ACCTATGATACATAT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 276 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC
OPERATING SYSTEM:
SOFTWARE: Patent1
                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/460,458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 10036
                                                                                                                                      TOPOLOGY: un
                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                      NAME:
                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                          LOCATION:
                                                                                        NAME/KEY:
                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
255;
                                                                                                                                                                                                                                                                                                                Misrock, S. Leslie
                                                                                                                                                               nucleic acid
                                                                                                                                                                                 486 base pairs
                                                                                                                                                                                                                                           (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov, Oded VETHODS OF DETECTION USING CELLULOSE BINDING DOMAI
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Floppy disk
IBM PC comparible
SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                                         1..486
                                                                                                                                    unknown
                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PENNIE & EDMONDS
55 Avenue of the Americas
                                                                                                                                                                                                                                                         (212)
                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                       concurrently herewith
                                                                                                                                                                                                                                                                                                                                                  14-APR-1993
                                                                                                                                                     double
                 100.0%;
                             33.2%;
                                                                                                                                                                                                                                                                                                                                                                US 08/048,164
                                                                                                                                                                                                                                                                                                18,872
 0;
              Score 255; DB 1; Le
Pred. No. 5.5e-124;
                                                                                                                                                                                                                                                                                        7809-007
 Mismatches
 0;
                             Length 486;
 Indels
 0;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               397
 0;
```

Qy

16 TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75

31 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC

90

밁

396 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT

337

망 õ 밁

밁 ş В Š 밁 Ş

```
US-08-460-458-3/c
                                                                                                                                                                   ; TOPOLOGY: un ; MOLECULE TYPE: US-08-460-458-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/08460458 Patent No. 5738984
                                                                                                                                       Query Match
                                                                                                           Matches
                                                                                                                                                                                                                                                                            TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US OF FILING DATE: 14-APR-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Shoseyo
                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                      TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256 ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          211 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/460,458 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                 76
                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                                                                              LENGTH:
ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATACACAAGTGAT 135
                                               ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                           al Similarity
255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New York
                                                                                                                                                                                                                            nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                    Misrock,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                              486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                         (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shoseyov,
                                                                                                           Conservative
                                                                                                                                                                                                     unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                 double
                                                                                                                                                                                                                                                                                                                                                                                    S. Leslie
                                                                                                                         33.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KITS AND METHODS OF DETECTION USING CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                  18,872
                                                                                                        Score 255; DB 1; L; Pred. No. 5.5e-124; 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                      7809-007
                                                                                                                                      Length 486;
                                                                                                           Indels
                                                                                                           0;
                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       255
                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                               Q
                                                                                                                                       US-08-460-455-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-460-455-1
                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application Patent No. 5837814
                                                                                           Query Match
Best Local :
                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/
FILING DATE: CONCULTENTLY
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 14 APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: MISTOCK, S. Leslie
REGISTRATION NUMBER: 18,87
REFERENCE/DOCKET NUMBER: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                            TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                     MOLECULE TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336
                                                                             hes 255;
                                 16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                  31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                            TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE:
                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGCGTGCATTAGTAGGAAATAGCTAT
                  TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                             h 33.2%;
Similarity 100.0%;
55; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1155 Avenue of the Americas
                                                                                                                                                                                                                                                          486 base pairs
                                                                                                                                                                                                                                                                                                                        : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Doi, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov, Oded
Shpiegl, Itai
                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CELLULOSE BINDING DOMAIN PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08460455
                                                                                                                                                                                                                                                                                                                                                                                                                                               US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/460,455
                                                                                                                                                                                                                                                                                                                                                                               18,872
                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                    7809-009
                                                                                         Score 255; DB 2; L
Pred. No. 5.5e-124;
                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.25
                                                                                                           Length 486
                                                                             <u>.</u>.
                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
```

á В Ş

0,

```
Qy
   Ş,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                  Ъ
                                                                                                                                                            US-08-460-455-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-460-455-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/08460455 Patent No. 5837814
                                                                                                                            Query Match
                                                                                                  Matches
                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                        TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,455
FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 780°
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 01
FILING DATE: 14-APR-1993
ATTORNEY AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Doi, Roy H. TITLE OF INVENTION: CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Shpiegl, Itai
APPLICANT: Goldstein, Marc A.
                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271 ACCTATGATACATAT 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                    456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
ZIP: 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 1155 Ave
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
76 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                 16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                    NAME: Misrock, S. Leslie REGISTRATION NUMBER: 18,8
                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTACACAAGTGAT 135
                                    ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                        nucleic acid
                                                                                                                                                                                                                                         486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shoseyov, Oded
                                                                                                  Conservative
                                                                                                                                                                                            unknown
                                                                                                                                                                                                               double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CELLULOSE BINDING DOMAIN PROTEINS
                                                                                                              33.2%; Score 255; DB 2; Li
100.0%; Pred. No. 5.5e-124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                                                                                                                                    US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                  18,872
                                                                                                                                                                                                                                                                           ω
..
                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                         7809-009
                                                                                                                            Length 486
                                                                                                  Indels
                                                                                                  0;
                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                  0;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                              QΥ
                                                                                                                               US-08-330-394A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-330-394A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/08330394A Patent No. 5856201
                                                                  Matches
                                                                                              Query Match
                                                                                                                                                                                                                                                                                            TELEPHONE: (212) 790-90
TELEFAX: (212) 869-8864
TELEX: 66441 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/330,394A
FILING DATE: 27-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP OF PCT/US94/
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
NAME: MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Shosey
                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: METHODS OF DETECTION USITITLE OF INVENTION: CELLULOSE BINDING DOMAIN NUMBER OF SEQUENCES: 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                              FEATURE:
                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            336 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: FEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          256 ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                276 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   216 ACCTATGATACATAT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
COMPUTER: PC-DOS/MS-DOS
COUNTRY: UZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1155 AVE
CITY: NEW YORK
STATE: NEW YORK
                                                                Local Similarity
nes 255; Conserv
                                                                                                                                                                                                                TOPOLOGY: un
                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                               NAME/KEY:
                                                                                                                                                                                                                                                  TYPE:
                                                                                                                                                LOCATION:
                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                             nucleic acid
                                                                                                                                                                                                                                                               486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Doi, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shpiegl, Itai
Goldstein, Marc A.
                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yosef, Karmey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shoseyov, Oded
                                                                                                                                                                                                                unknown
                                                                                                                                              1..486
                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PENNIE & EDMONDS
55 AVENUE OF THE AMERICAS
                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                               double
                                                                  33.2%; Score 255; DB 2; L
100.0%; Pred. No. 5.5e-124;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METHODS OF DETECTION USING THE
                                                                                                                                                                                                                                                                                                                                                                                                                                            CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Version #1.30
                                                                                                Length 486;
                                                                   Indels
                                                                     0;
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                     0
```

Дb

```
Š
                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-330-394A-3/c
                                                                                                                US-08-330-394A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/08330394A Patent No. 5856201
                                                         Matches
                                                                                 Query Match
                                                                                                                                                                                                  TELEFAX: (212) 869-886
TELEX: 66441 PENNIE
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: CIP
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/330,394A FILING DATE: 27-OCT-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 33
CORRESPONDENCE ADDRESS:
ADDRESSEE: PENNIE & EDMONDS
                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: METHODS OF DETECTION USING THE TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                MOLECULE TYPE:
                                                Local 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 136
456 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
            16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: NEW YORK
                                                                                                                                         TOPOLOGY:
                                                                                                                                                        STRANDEDNESS: double
                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10036
                                                                     Similarity
                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                                     MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEW YORK
                                                                                                                                                                                    486 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Doi, Roy H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yosef, Karmey
Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoseyov, Oded
                                                         Conservative
                                                                                                                                          unknown
                                                                                                                                                                                                                                            (212) 790-9090
12) 869-8864
                                                                     33.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270
                                                                                                                                                                                                                                                                                                                                               CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                         7809-005
                                                                   Score 255;
Pred. No.
                                                         0;
                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.30
                                                                     DB 2; Lo
5.5e-124;
                                                                                  Length 486;
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135
                                                       0;
```

```
DЬ
                                                      Ωy
                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
Š
                                                                                                                  2
                                                                                                                                                                                                            ; MOLECULE TYPE: DNA US-09-006-636-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-006-636-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 5, Applic Patent No. 6005092
                                                                                                                                                  Matches
                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9990
TELEFAX: (212) 869-8864
                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 499 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Baldwin, Geraldine F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: ARABIDOPS: TITLE OF INVENTION: GLUCANASE NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Shoseyov, (APPLICANT: Shani, Ziv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  216 ACCTATGATACATAT 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    396
136 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                             96
                                                          76
                                                                                    STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Pennie & Edmonds LLP STREET: 1155 Avenue of the Amer
                                             ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGCTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                             ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                  255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10036-2711
                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/09006636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ϋ́N
                                                                                                                                                                                                                                                                                  499 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FastSEQ Version 2.0
                                                                                                                                                  Conservative
                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM Compatible
                                                                                                                                                                                                                                                         double
                                                                                                                                                              33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ARABIDOPSIS THAI GLUCANASE GENE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     us/09/006,636
                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the Americas
                                                                                                                                                              Score 255; DB 3; L; Pred. No. 5.5e-124;
                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                               7809-019
                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THALIANA ENDO-1,4-BETA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROMOTER AND PROTEIN
                                                                                                                                                                            Length 499,
                                                                                                                                                  Indels
                                                                                                                                                  0
                                                                                                                                                  Gaps
                                                                                       95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    337
```

```
Ş,
                                 Db
                                                             Qy
                                                                                                В
                                                                                                                               QΥ
                                                                                                                                                               DЬ
                                                                                                                                                                                            Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
US-09-006-632-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                us-09-006-632-5
                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5, Application Patent No. 6184440
                                                                                                                                                                                                                                                                                                                                                                                                TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Shani, Ziv
APPLICANT: Shpigel, Etai
TITLE OF INVENTION: TRANSGENIC
TITLE OF INVENTION: MORPHOLOGY
NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Baldwin, Geraldine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: FastSEQ Version 2 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
196 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                 156 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                  136 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           156
                                                                                                                                                                                                                                Local Similarity nes 255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 7809-018
                                                                                                  96
                                                                                                                 76 ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTACTACAAGTGAT 135
                                                                                                                                                                 36
                                                                                                                                                                                  16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Baldwin, Geraldine F. REGISTRATION NUMBER: 31,232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/09/006,632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                               ENGTH: 499 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 215
                                                                                                  ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 275
                                                                                                                                                                 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΥN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Pennie & Edmonds LLP
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                             (212) 790-9090
(212) 869-8864
                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBM Compatible
                                                                                                                                                                                                                                                                                                                                                  double
                                                                                                                                                                                                                                                 33.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/09006632
                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                 Pred. No. 5.5e-124;
                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OF ALTERED
                                                                                                                                                                                                                                                                Length 499,
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                75
                                                                                                  155
                                                                                                                                                                 95
                                                                                                                                                                                                                                0;
```

```
Search completed: October Job time: 63.0363 secs
                                                                                20
                                                                                                              Вþ
                                                                                                                                       Qγ
                                                                                                                                                                      Дb
                                                                                                                                                                                               Qy
                                                                                                                                                                                                                             ДЪ
                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: DNA encoding a Cellulose Binding Domain (CBD)-Gaussia lucifera US-09-277-716-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
US-09-277-716-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5-09-2,,
Sequence 21, Approximate No. 6232107
                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 255; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 21
LENGTH: 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Bryan, Bruce
APPLICANT: Szent-Gyozgyi, Christopher
APPLICANT: PROLUME, LTD.
TITLE OF INVENTION: LUCIFERASES, FLUORE
CURRENT APPLICATION NUMBER: US/09/277,7
CURRENT FILING DATE: 1999-03-26
EARLIER APPLICATION NUMBER: 60/102,939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EARLIER APPLICATION NUMBER: 60/079,624
EARLIER FILING DATE: 1998-03-27
NUMBER OF SEQ ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EARLIER FILING DATE: 1998-10-01
EARLIER APPLICATION NUMBER: 60/089,367
EARLIER FILING DATE: 1998-06-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Artificial Sequence: fusion construct FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (1)..(1146)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
                                                                                                               196
                                                                                                                                                                      196
                                                                                                                                                                                                  136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   276 ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                       256
                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                                  16 TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                     ACCTATGATACATAT
                                                                                                                              GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCCAAGCAACATCA
                                                                                                                                                                                               GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTATGATACATAT
                                                                                                               GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                      TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09277716A
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                         33.2%;
           27,
                                                                                   270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  290
                                                       270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270
             2002,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASES, FLUORESCENT PROTEINS, US/09/277,716A
                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                            Score 255;
Pred. No.
             23:22:28
                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                          5.5e-124;
                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                      Length 1146;
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUCLEIC
                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACIDS
                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                               255
                                                                                                                                          255
                                                                                                                                                                                                                                                                                       75
                                                                                                                                                                                                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENCODING
                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THE
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on:
                                                                                                                                                                                                                                                                                                                Pred. No.
                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                              is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                          No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                              Query
Match
    100.0
62.9
35.2
33.2
33.2
33.2
33.2
33.2
33.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-677-374-5
768
                                                                                                                                                                                                                                                                                                                                                                           14:
15:
16:
17:
18:
19:
19:
20:
21:
22:
23:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1736436 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                October 27, 2002, 17:46:54;
                                                                                                                                                                                                                                                                                                                                                             SIDSI/gcgdata/geneseq/geneseqn-embl/NA1984_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1984_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1986_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1989_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1990_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1992_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1992_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1993_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1993_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1993_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001A_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001B_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001B_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001B_DAT:*

SIDSI/gcgdata/geneseq/geneseqn-embl/NA2001B_DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N_Geneseq_032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*
                                                                                                                                                                                              Length
    768
483
1030
486
486
499
507
                                                                                                                                                                                                  DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               858457221 residues
  AAF86247
AAF1043
AAD11044
AAQ72917
AAV74072
AAX24930
AAD11042
AAD11046
                                                                                                                                                                                                IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Search time 194.542 Seconds
(without alignments)
6777.910 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3472872
Cellulose binding
C. cellulovorans C
Clostridium cellul
Clostridium cellul
Chimeric S peptide
                                                                                             DNA sequence of cl
DNA sequence of E.
Clostridium cellul
Clostridium cellul
                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O
```

5	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10
18	18	18	18	18	18	18	18	18	18	19	19	19	19	19	19	19	19	19	19	19	19	19	19	20	20	34	40	75	87	102	104	118	255	255	255
2.3									٠			٠												2.6			5. 2						33.2		
3741	3684	1903	1623	1445	1356	1353	1300	1237	1029	6382	6304	6223	5562	4283	2878	2735	2562	2042	1482	1482	1438	892	808	3833	26	38	110	94	111	102	110	118	1288	1146	1146
22	23	22	23	23	23	21	18	23	22	22	22	22	19	22	22	22	22	22	20	20	21	22	19	23	20	21	22	22	22	22	22	22	22	24	20
AAH81357	AAS84339	AAD16584	AAS82377	AAS77372	AAS59780	AAC39312	AAT66951	AAS94517	AAH52010	AAI58573	AAI58574	AAI58572	AAT86625	AAS25994	AAS02416	AAF32744	AAI59154	AAH16496	AAZ31562	AAX90978	AAZ45336	AAH07401	AAV28688	ABL02577	AAV74089	AAA27285	AAF86256	AAF86253	AAF86251	AAF86255	625	AAF86254	$\mathbf{-}$	N	AAZ27550
	nove	prote	nove	DNA encoding novel		Arabidopsis thalia	Asialoglycoprotein	DNA encoding novel	Mycobacterium tube	Human polynucleoti	polynucleot	Human polynucleoti	C. thermocellum Ci	cDNA enc	secreted		Human polynucleoti	NA sec	Pectate lyase CBD		DNA encoding a man	lone	Ripening banana pu	Drosophila melanog	Plasmid pET-RI-CBD	primer for	primer #6	primer #3	primer #1	primer #5	primer #2	CR primer #4 use	dium cell	sia species C	Gaussia luciferase

ALIGNMENTS

```
RRSULT 1
AAP8628
AID AAP88
AZ AAF88
XX DAF8
XX DAF8
XX DNA
XX POIK
KW VACC
KW VACC
KW SRS:
XX Syntc
CS Syntc
CS Syntc
FT CDS
FT CDS
FT T Misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc
FT misc

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; ds.
                                                    CA2281913-A1
                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Piscirickettsia salmonis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA sequence of c17e2 ospA construct with N-terminal fusion partner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF86248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAF86248 standard; DNA;
                                                                                                                                                                                                                               /note= "DNA encoding undefined N-terminal fusion partner"
286..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1..768
                                                                                                                                     /note= "Optimised OspA construct c17E2"
                                                                                                                                                                                                                                                                                                                                                                                                 /partial
/product= "C17E2 OspA with N-terminal
/note= "No stop codon is given"
                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                         ′*tag=
                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP.
```

fusion

partner"

```
Qy
                              밁
                                                   δÃ
                                                                                    멍
                                                                                                             Ωy
                                                                                                                                         В
                                                                                                                                                               Qy
                                                                                                                                                                                               Дb
                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed ospa, or an immunogenic fragment of ospa in the form of a vaccine. The method is used for protecting animals, particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen prickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents P. salmonis Ospa DNA termed C17E2 optimised for expression in Escherichia coli fused to DNA encoding an undefined N-terminal fusion partner. The protein encoded by this fusion construct is used in a vaccine to create an anti-Ospa antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-MAR-2001
    481
                              421
                                                         421
                                                                                    361
                                                                                                                361
                                                                                                                                           301
                                                                                                                                                                   301
                                                                                                                                                                                                241
                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
  GGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTG
                                                                                                                                                                                                                                                                                                         TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                            CGCCAGGAAGTTGGCGCGCCACCGGTGCCGGTTGTTGGGCCGGTGTTGCCCGGCCAGCTGTTC
                                                                                                CGCCAGGAAGTTGGCGCGCCACCGGTGCGGGTGTGTGGGCGGTGTTGCCGGCCAGCTGTTC
                                                                                                                                                      CAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCAGAACTTCAGC
                                                                                                                                                                                                GCAAGCCCAACATCAACCTATGATACATATCTGGATCCGTCTCATATGCGTGGTTGCCTG
                                                                                                                                                                                                             GCAAGCCCAACATCAACCTATGATACATATCTGGATCCGTCTCATATGCGTGGTTGCCTG
                                                                                                                                                                                                                                                     TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                   TTAGGAAATAGCTATGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                 ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                    2001-316844/34.
                                                                                                                                           CAGGGCAGCTCTCTGATCATTATCTCTGTTTTCCTGGTGGGTTGCGCCCAGAACTTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KAY W W.
BURIAN J.
KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB81128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₿₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 768; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; 183 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MΆ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190 G; 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     768;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                 120
    540
                                                         480
                                                                                    420
                                                                                                                                                                     360
                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                              480
                                                                                                                                           360
                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
RESULT 2
AAF86247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                          (KAYW/) KAY W W (BURI/) BURIAN (KUZY/) KUZYK M
This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals
                                                                             Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                              vaccine; OspA;
SRS; 17E2; ds.
                                                             Example
                                                                                                                                                                                                                                                                               CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                                                           Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                  Poikilothermic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF86247 standard;
                                                                                                                          P-PSDB;
                                                                                                                                                      Kay WW,
                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                           17-MAR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAGGAACGCCGTCAGCAGTAC
                                                                                                                                  2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACC
                                                             ω,.
                                                                                                                          AAB81127.
                                                                                                                                                       Burian J,
                                                           Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                      of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                           M N N
                                                             4C;
                                                                                                                                                                                                                                                                                                                                                                                                                                 fish;
                                                                                                                                                                                                                                                                                                                                                                                                                         salmonid rickettsial
                                                                                                                                                                                                                    99CA-2281913
                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                     E. coli optimised
                                                                                                                                                                                                                                                                                                                                                                                            salmonis
                                                                                                                                                                                                                                                                                                /partial
                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                                                                                                                                                                                                                                    1..483
                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                           35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                        Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                  Piscirickettsia
                                                                                                                                                                                                                                                                                                                                           מ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  483
                                                             English.
                                                                                                                                                        MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ospA
                                                                                                                                                                                                                                                                                                                                                                                                                        septicaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                  salmonis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene 17E2.
                                                                                                                                                                                                                                                                                                                                                                                                                        rickettsial pa
a; rickettsial
                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                            sequence
                                                                                                                                                                                                                                                                                                                                                                                                                        pathogen;
al disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                             does
```

animals

```
RESULT 3
ADD1104
XX ADD1
XX ADD1
XX ADD1
XX POLy
XX POLy
XX POLy
XX Clos
XX Clos
XX CBD-
XX CBD-
XX CLOS
XX CBD-
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CLOS
XX CL
                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                        yarn; trucción con constriction con durability; e durability; e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmo rickettsial septicaemia (SRS) and other rickettsial diseases. The protectial septicaemia (SRS) and other rickettsial diseases. The grequence represents DNA which has been optimised for expression in Escherichia coli to encode the P. salmonis OspA protein. An OspA protein an N-terminal fusion partner is used in a vaccine to create an
                                                                               Clostridium
                                                                                                                                                                        Polysaccharide modification; polysaccharide binding
                                                                                                                                                                                                       Clostridium
                                                                                                                                                                                                                                       24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                    AAD11043 standard;
                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346
                                                                                                                                                                                                                                                                                                                                                                                                              766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCGGTAACAGCTACTCTGTGGAACCGGTTCGCACCTACCAGCGTTACAACAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTCGTCGATGGCCATCGGCCGTGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGCGCCACCGGTGCGGTTGTGGGCGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATCTACGGCACCGCGTGCCCTCAGCCGGATGGCCGCTGGCAGGTGATTAGCACCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCGTCAGCAGTACTGCCGCGAATTTCAGCAGAAAGCCATGATCGCAGGTCAGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCGGCCACCGGTTGCGGTTGTGGGCGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                AA
                                                                                                                                                                                                                                                                                                                                                                                                               AAA 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAACCAGTCTCTGGAAAAAGTGAAAGCCGGCCAGGTTACTCGTTGGCGTAATCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGGCGGTCTGATTGGCTCTAAAATCGGTCAGAGCATGGACCAGCAGGATAAAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               483
                                                                                                                                                                                                                                                                                                                                                                                483
                                                                                                                        ; textile; biological crosslinker; mechanical property; cellulovorans cellulose binding domain; wet strength; elasticity; CBDclos; cellulose binding protein A; CBP
                                                                                                                                                                                                       cellulovorans cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                               cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP; 108
                                                                                                                                                                                                                                      (first
/product=
                                Location/Qualifiers 3..572
                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; 127
                                                                                                                                                                                                                                                                                                     573
 "Cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 483;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ç
                                                                                                                                                                                                                                                                                                    ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G;
                                                                                                                                                                                                     binding domain-180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.1e-242;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
 domain-180 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                        domain;
                                                                                                                                                                                                       (CBD-180)
                                                                                                                                                                         PBD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         salmonid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
an
                                                                                                                                                                                                       DNA.
                                                                                                                                                                        paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                        Qy
                                                                            DЪ
                                                                                                        δλ
                                                                                                                                         В
                                                                                                                                                                   δÃ
                                                                                                                                                                                                   В
                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Preparation of a desired structura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Levy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         penetrate paper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1.2; Fig 1e-1g; 121pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (YISS
                 243
                                                                              183
                                                                                                                                          123
                                                                                                                                                                        121
                                                                                                          181
                                                                                                                                                                                                       63
                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                     w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-457121/49.
DB; AAE05746.
                                               GCAAGCCCAACATCAACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                 270;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CBD TEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      structural,
                                                                                                                                                                                                                                                                                                                                                                                               573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TECHNOLOGIES LTD
                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140
99US-0166389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "CDS does not include stop codon"
/partial
                                                                                                                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VED
                                                                                                                                                                                                                                                                                                                                              35.2%;
                                                                                                                                                                                                                                                                                                                                                                                             A; 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                             98 G;
```

```
CC The present invention relates to methods and compositions for cross-
CC linking and/or modifying the properties of polysaccharide materials.
CC The method involves treating the polysaccharide structure with a
CC polysaccharide binding domain (PBD) fusion protein. The method is
CC mechanical broperties of polysaccharide materials such as paper,
CC yarns, fibers and textiles, using biological crosslinking agents.
CC The polysaccharide containing materials have improved mechanical
CC properties such as wet strengths, durability and elasticity. The PBD
CC reagent is applied in the forming stage in fluting paper manufacture
CC which eliminates the sizing step. The use of a biological crosslinker
CC improves the recyclability of paper products. The PBD reagent maintains
CC the fine fibers in a slurry therefore resulting in better recovery of
CC raw materials. The PBD molecules are eluted by strong alkaline conditions
CC penetrare soner.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is a DNA encoding Clostridium cellulovorans cellulose binding domain (CBD)-180. CBD-180 contains 180 amino acids Clostridium cellulovorans CBD (CBDclos) of cellulose binding protein
                                                                                                                                                                                                            TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                             TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                           TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polysaccharide containing material having at least
al, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 270;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 22;
1e-130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                           242
                                                                                                                 240
                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
The present invention relates to methods and compositions for cross-CC linking and/or modifying the properties of polysaccharide materials. CC The method involves treating the polysaccharide structure with a CC wased to alter the structural, chemical, physical, electrical and CC mechanical properties of polysaccharide materials such as paper, commended the containing materials have improved mechanical constinking agents. CC The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD CC was properties such as wet strengths, durability and elasticity. The PBD CC which eliminates the sizing step. The use of a biological crosslinker cCC the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of craw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
Matches 270;
                         Query Match
Best Local S
                                                                   Sequence
                                                                                            cellulose binding
                                                                                                                                                                                                                                                                                                                                                                    Example 1.2;
                                                                                                                                                                                                                                                                                                                                                                                                Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CBDT-) CBD TECHNOLOGIES LTD.
(YISS ) YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polysaccharide modification; polysaccharide binding domain; yarn; fibor; textile; biological crosslinker; mechanical prowet strength; durability; elasticity; cellulose binding domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD11044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD11044 standard; DNA; 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-457121/49
                         Similarity
                                                                    1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linker protein;
          Conservative
                                                                                           sequence is a DNA e
inding domain (CBD)
                                                                                                                                                                                                                                                                                                                                                              Fig 2b-2e; 121pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cellulovorans.
                                                                 B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cellulovorans CBD cross linker protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140
99US-0166389
                                                                 402 A; 195 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= "CCP protein"
/transl_except= "(pos:
/note= "CDS does not in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
3..1028
                    35.2%; Score 270;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shoseyov O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   elasticity;
CCP; ds.
          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ept= "(pos: 1020..1028, aa:Pr
does not include stop codon"
                                                                                           encoding Clostridium cellulovorans
) cross linker protein (CCP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                              English
       Mismatches
                                                              166 G;
                                                              267 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cellulose binding domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020..1028, aa:Pro-Asp)"
                                   DB 22;
        0,
                                                             other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mechanical property
                                Length 1030;
                                                                                         (CCP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CCP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  encoding DNA.
    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PBD; paper;
  0;
```

```
RESULT 5
AAQ72917
ID AAQ7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
comprising the CBD and a second protein. The second protein is pref. Protein A, heparinase, a hormone or an enzyme capable of degrading an environmental pollutant, or an HSP, HSP antibody, cross-reactive HSP-related protein or an antigenic portion of this. The CBD and FP may be used in drug delivery, affinity sepns, and diagnostic techniques. CBD nucleic acid may be obtd. from a variety of cell sources that produce CBDs that bind with high affinity and in a
                                                                                AAQ72917/R63634 is a novel isolated cellulose binding domain. It binds crystalline with a Kd ranging from 1.5 microM - 0.5 microM, pref. with a Kd of <1.2 microM, esp. <1.0 microM. The protein and the encoding DNA are claimed, as is a CBD fusion protein (FP)
                                                                                                                                              Claim 10; Fig 1; 125pp;
                                                                                                                                                                        diagnostic techniques
                                                                                                                                                                             Isolated cellulose binding domain and fusion proteins - with applications. including drug delivery, affinity separations.
                                                                                                                                                                                                                                                                               (REGC
                                                                                                                                                                                                                                                                                                                 14-APR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                       14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                               27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                    W09424158-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ72917;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAQ72917 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \vdash
                                                                                                                                                                                                                                  1994-341767/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGCCCAACATCAACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAAGCCCAACATCAACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGGAAATAGCTATGTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTACACAAGTGATGGTACAACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTACACAAGTGATGGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAAATTACTAACACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAT
                                                                                                                                                                                                                                                                            UNIV CALIFORNIA.
YISSUM RES & DEV
                                                                                                                                                                                                                                                     Goldstein MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              binding domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                93US-0048164
                                                                                                                                                                                                                                                                                                                                      94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                        . 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                English.
                                                                                                                                                                                                                                                    Shoseyov O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486
                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CBD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ds.
                                                                                                                                                                                                                                                    Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      270
                                                                                                and
                                                                                                                    pref.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
```

```
RRESULT 6
AAVV10V1
AAVV10V1
AAVV10V1
AAV AAVV1
AAV AAVV1
AAV CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW CALL
KW C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                  27-OCT-1994;
14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           immunoassay; heat-shock protein; cross reactive protein; detection
antigenic fragment; antibody; insulin-dependent diabetes mellitus;
cellulose; chitin; cellulolytic; amorphogenic; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cellulose binding domain; CBD; CbpA; fusion protein; diagnosis; HSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C. cellulovorans CbpA CBD DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-MAR-1999
Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAV74072;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAV74072 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             reversible manner or that produce CBD encoding mRNA. The source of CBD encoding nucleic acid is C. cellulovorans.
                                                                                                      P-PSDB;
                                                                                                                                                                            Dol RH,
                                                                                                                                                                                                                          (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                      27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                    1999-105130/09.
DB; AAW90077.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ol Similarity
255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   486
                                                                                                                                                                            Goldstein MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                               94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                                                    94US-0330394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                          & DEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33.2%; bu
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                         Shoseyov
                                                                                                                                                                                                                             င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 255;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                            Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 binding domain"
                                                                                                                                                                            Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    preferred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
  RRESULT 7
RAX24930
ID AAXX
XX
AX
AAX
AAX
AAX
DT 21-J
DT 21-J
DT 21-J
CLOS
XX
CCLOS
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                  13-JAN-1998;
27-JUL-1997;
13-JAN-1998;
  WPI; 1999-180488/15
                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis morphology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAX24930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                   Shani Z,
                                                                                                 (YISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-JUN-1999
                                                                                                                                                                                                                                                    26-JUL-1998;
                                                                                                                                                                                                                                                                                                    18-FEB-1999
                                                                                                                                                                                                                                                                                                                                                   WO9907830-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             76
                                                                                               _
                                                                                                 MUSSIA
```

```
Query Match
Best Local Similarity
Matches 255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence encodes a cellulose binding domain (CBD) derived from the CbpA protein of Clostridium cellulovorans. The sequence is used the construction of a fusion protein which can be used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD, has very high affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but has almost no cellulolytic or amorphogenic activities. The CBD binds over a wide pH range and is not released from cellulose by washing with water.
                                                                                                                                                                                                                                             Clostridium celulovorans.
                                                                                                                                                                                                                                                                                                              Cellulose binding domain; CBD;
                                                                                                                                                                                                                                                                                                                                              Clostridium cellulovorans cbpA cellulose binding domain DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 7.2.1; Fig 1A-B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the analyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATCTGACAGTGATTTAAATTAAATGACGTAAAAGTTAGATATTACTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                486 BP; 194
Shoseyov
                                                                                                                                                                                                                                                                 thaliana; transgenic plant; crop improvement cell wall; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.2%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                  98US-0006636.
97IL-0121404.
98US-0006632.
                                    RES
                                                                                                                                        98WO-IL00345
ó
                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.
                                    DEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            270
 Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                                                          499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 255; DB 20;
Pred. No. 7e-123;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79 G;
 E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    210
```

```
RESULT 8
AAD11042
                                                                                                                                                                                                                                                                                                   Ħ
                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
WO200134091-A2
                                                                                                                                          Polysaccharide modification; polysaccharide binding domain; PBD; pyarn; fiber; textile; biological crosslinker; mechanical property; Clostridium celluloyorans cellulose binding domain; wet strength;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the cbpA protein of Clostridium cellulovorans. It was obtained by PCR amplification (see also AAX24952-53), and was used in the construction of binary vector pCCl, in which cbd was joined to the promoter and signal region of the novel endo-1,4-beta-glucanase cell gene (see AAX24923) of Arabidopsis thaliana. Expression of cbc in transgenic tobacco plants modulated their growth. The cell promoter can provide expression of any protein in elongating tissue. CBD is an example of a cell wall modulation transgene used to alter the structure or morphology of a plant. Transgenic plants of the invention may have altered biomass, growth, yield,
                                                                                                   Clostridium
                                                                                                                                                                                                          Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           greater or less resistance to biodegradation, be more or less digestible by ruminants, have altered cellulose content, larger smaller leaves, etc., when compared to non-transgenic plants of
                                                                                                                                                                                                                                                                                                AAD11042 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transgenic plants expressing cell-wall modulating protein - have altered morphology, e.g. increased growth, modified fiber length or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   same species.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 134; 144pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cellulose
                                                                                                                                                                                                                                                                                                                                                                           276
                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                     216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAACTCTAACAAATCAGCACAAACAAACTCAAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                                                                                                                                                            ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAAGTTAGATATTAGTAACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA fragment encodes the cellulose binding domain (CBD) of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       content
                                                                                                cellulovorans
                                                                                                                                                                                                      cellulovorans cellulose binding domain
                                                                                                                               elasticity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33.2%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP; 197
                          /product=
                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; 93 C; 82 G; 127 T; 0 other;
                                                                                                                                                                                                                                                                                                507
                                                                                                                              CBDclos; cellulose binding protein A;
                        "CBDclos protein"
                                                                                                                                                                                                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 255; DB 20;
Pred. No. 7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                       (CBDclos) DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Expression of cbd
h. The cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                        paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95
                                                                                                                                                                                                                                                                                                                                                                                                                                   275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           215
                                                                                                                              ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
AAD11046
ID AAD110
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                              В
                                                                                                                                                                                          Q
                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                Дb
                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                          Ър
                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to methods and compositions for cross-
CC linking and/or modifying the properties of polysaccharide materials.
CC The method involves treating the polysaccharide structure with a
CC polysaccharide binding domain (PBD) fusion protein. The method is
CC used to alter the structural, chemical, physical, electrical and
CC mechanical properties of polysaccharide materials such as paper,
CC yarns, fibers and textiles, using biological crosslinking agents.
CC The polysaccharide containing materials have improved mechanical
CC properties such as wet strengths, durability and elasticity. The PBD
CC reagent is applied in the forming stage in fluting paper manufacture
CC which eliminates the sizing step. The use of a biological crosslinker
CC improves the recyclability of paper products. The PBD reagent maintains
CC the fine fibers in a slurry therefore resulting in better recovery of
CC raw materials. The PBD molecules are eluted by strong alkaline conditions
CC which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               penetrate paper.
The present sequer cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 507
                                                                                                  276
                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1.1; Page 111; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Levy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-MAY-2001.
                                                                                                                                                              216
                                                                                                                                                                                             196
                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-NOV-2000;
                                                                                                                                                                                                                                                                                            96
                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                       36 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                        16 TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                              GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                          GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                          GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                         GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                          ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTACTACAAGTGAT 135
                                                                                                                              ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                         ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                       255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-457121/49
DB; AAE05745.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CBD TEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence is a DNA encoding Clostridium cellulovorans .nding domain (CBDclos) of cellulose binding protein .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TECHNOLOGIES LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RES DEV CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                                                                                                                     33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; 94 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov 0;
                                                                                                                                                                                                                                                                                                                                                                                                                      Score 255; DB; Pred. No. 7e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 22; Length 507; 7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                      0,:
                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                          255
                                                                                                                                                                                                                                                         195
                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                                                        95
                                                                                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                          215
                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

AAD11046 standard;

DNA;

```
polysaccharide binding domain (PBB) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CE chimeric protein; S peptide-cellulose binding domain-S protein;
                   penetrate paper.
The present sequence is a DNA encoding S peptide-cellulose binding
domain-S protein (Spep-CBD-Sprot), a fusion protein derived from
                                                                                                                                                                                                                                                                                                                                                                                                                         The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Preparation
desired stru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spep-CBD-Sprot; bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polysaccharide modification; polysaccharide binding domain; PBD; yarn; fiber; textile; biological crosslinker; mechanical propert;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Levy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAD11046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Linking
                                                                                                                                                                                                                                                                                                                                                                                           present invention relates to methods and compositions for cross-
king and/or modifying the properties of polysaccharide enaterials.
method involves treating the polysaccharide structure with a
ysaccharide binding domain (PBD) fusion protein. The method is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CBD TECHNOLOGIES LTD
YISSUM RES DEV CO HE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tion of a polysaccharide containing structural, chemical, physical, el
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig 4b-4g;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide-cellulose
cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140
99US-0166389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag= b
/note= "This
652..981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product= "Spep-CBD-Sprot protein"
/transl_except= "(pos: 979..981, aa:Xaa)"
/note= "Xaa corresponds to in-frame stop codon;
CDS does not include start and stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note- "This region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۶,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shoseyov 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            binding
bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domain-S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g material having at least
lectrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from bovine"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     c.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cellulovorans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   one
```

```
RESULT 10
AAZ27550
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                27-MAR-1998;
15-JUN-1998;
01-OCT-1998;
              This sequence encodes a luciferase of the invention. The invention relates to Renilla mulleri, Gaussia and Pleuromamma luciferase and Renilla and Ptilosarcus green fluorescent protein (GFP) nucleic aci proteins. The luciferases and GFPs can be used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                              Disclosure;
                                                                              New isolated Renilla mulleri, Renilla and Ptilosarcus green
                                                                                                                  WPI; 1999-580443/49
                                                                                                                                   Bryan BJ, Szent-Gyorgyi
                                                                                                                                                    (PROL-)
(BRYA/)
                                                                                                                                                                                                                                                      W09949019-A2
                                                                                                                                                                                                                                                                        Gaussia
                                                                                                                                                                                                                                                                                                bioluminescence-generating system; toy; cosmetic; fai body paint; squirt gun; balloon; slimy play material;
                                                                                                                                                                                                                                                                                                                                     Gaussia luciferase
                                                                                                                                                                                                                                                                                                                                                        13-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                          AAZ27550
                                                                                                                                                                                                                   26-MAR-1999;
                                                                                                                                                                                                                                    30-SEP-1999
                                                                                                                                                                                                                                                                                         fusion
                                                                                                                                                                                                                                                                                                                  Luciferase;
                                                                                                          P-PSDB; AAY39952
                                                                                                                                                                                                                                                                                                                                                                                                                                       358
                                                                                                                                                                                                                                                                                                                                                                                                                                                        256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                        protein;
                                                                                                                                                    PROLUME
BRYAN B
                                                                                                                                                                                                                                                                      sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            984
                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                             Page
                                                                                                                                                                                                                                                                                                                   green fluorescent protein; GFP; screening assay; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP;
                                                                                                                                                                               98US-0079624.
98US-0089367.
98US-0102939.
                                                                                                                                                    J.
                                                                                                                                                                                                                   99WO-US06698
                                                                                                                                                                                                                                                                                          ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           325
                                                              222-223;
                                                                                                                                                                                                                                                                                                                                   fusion protein coding sequence
                                                                                                                                                                                                                                                                                                                                                                                          DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α.
                                                                                                                                                                                                                                                                                                                                                                                                                                       372
                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                   Ç
                                                            233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 255;
                                                                             Gaussia and fluorescent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 22;
7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Τ,
                                                                                       Pleuromamma luciferase and
                                                                              protein nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 984;
                                                                                                                                                                                                                                                                                                           fairy dust;
                                                                                                                                                                                                                                                                                                 soap;
                                                                                acids
                                                                                                                                                                                                                                                                                                 t; beverage;
toothpaste;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

method and articles of manufacture.

They can be expressed

assays,

screening methods, diagnostic

acids

using

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAD22201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFPS can be used in e.g. toys, cosmetics, fountains, personal care items, fairy dust, beverages, soft drinks, foods, textile products, bubbles, balloons, personal items, dentrifrices, soaps, body paints, bubble bath, ink or paper products. In particular, they can be used in e.g. squirt guns, pellet guns, finger paints, foot bags, greeting cards, slimy play material, clothing, bubble making toys, bath powders, cosmetics, body natures, body powders, body creams, toothpastes, mouthwashes, soaps, body paints, bubble bath, inks, wrapping paper, gelatins, icings, frostings, greeting cards, beer, wine, champagne, soft drinks, ice cubes, cory ice or fountains. The nucleic acids can also be used to produce
                                                                                                                                                                                                                                     Green fluorescent protein; GFP; bioluminescence generating system; toy; luciferase; finger paint; slimy play material; fishing lure; sparkler; doll; balloon; personal care item; cosmetic; bath powder; body cream; tooth paste; mouth wash; soap; body paint; ornamental transgenic plant; bubble bath; fountain; fairy dust; food; gelatin; icing; frosting; beer; wine; champagne; milk; soft drink; ice cube; ice; foot bag; beverage; dry ice; textile; clothing; paper product; greeting card; wrapping.paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1146 BP; 396 A; 222 C; 247 G; 281 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transgenic fish and plants.
                                                                                                                                                                                        Gaussia
                                                                                                                                                                                                                                                                                                                                                                   Gaussia species CBD-luciferase fusion protein encoding DNA
                                                                                                                                                                                                                                                                                                                                                                                                 12-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD22201 standard; DNA; 1146
               20-SEP-2001
                                             WO200168824-A2
                                                                                                                                                                                                                      fusion protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bacterial, yeast, fungal, plant, insect or animal cells. The Renilla
eri, Gaussia and Pleuromamma luciferase or Renilla or Ptilosarcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                      gs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                         ds.
                                                                                        /*tag= a
/product= "Gaussia CBD-luciferase fusion protein"
/note= "CDS does not include start and stop codon
                                                                                                                                       Location/Qualifiers
1..1146
                                                                         /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 255;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
RESULT 12
AAD11045
                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δã
                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QY
    KWWXEXTX ACK
                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            also relates to sequences of the bioluminescence generating system (e.g. luciferase). R. reniformis GFP are used in diagnostic methods and in the production of novelty items such as toys (e.g. squirt gun, peilet gun, toy "Halloween" eggs, toy cigarettes, board/card game toys), finger paints, slimy play material, bubbles in bubble making toys, fishing lures, dolls, sparklers, magic wand toys, balloons, personal care item (e.g. cosmetic, bath powders, body creams, tooth pastes, mouth wash, soaps, body paints, bubble bath), ornamental transgenic plants, fountain, fairy dust, food (gelatins, icings, frosting, beers, while, champagne, milk, soft drinks, ice cubes, ice, dry ice, beverage), textile (foot bag, clothing) and/or paper product (greeting cards, wrapping paper). The present sequence is a DNA encoding Gaussia species CBD-luciferase fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The patent discloses sea pansy (Renilla reniformis) green fluorescent proteins (GFP) and their corresponding polynucleotides. The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acids encoding Renilla reniformis green useful in diagnostic bioluminescence procedures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-MAR-2000; 2000US-189691P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1146 BP; 396 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 162-163; 175pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-MAR-2001; 2001WO-US08277.
Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; protein A-cellulose binding domain
                                                              Clostridium
                                                                                                                                                        AAD11045 standard; DNA;
                                                                                            24-SEP-2001
                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                     76
                                                                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2002-010561/01:
                                                                                                                                                                                                                                                                                           GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                     GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                   ACCTATGATACATAT
                                                                                                                                                                                                                                                                ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                   ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Szent-Gyorgyi
                                                            cellulovorans protein A-cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ć
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       222 C; 247 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 255;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Szczepaniak
                                                                                                                                                         ΒP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 24;
7e-123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fluorescent proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                             195
```

0,

domain;

ProtA-CBD;

ds

```
밁
                            S
                                                            Matches
                                                                                                                                                                                                 polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                            The present invention relates to methods and compositions for cross-
linking and/or modifying the properties of polysaccharide materials.
The method involves treating the polysaccharide structure with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                           The present sequence is a DNA encoding Clostridium cellulovorans Protein A-cellulose binding domain (ProtA-CBD). This sequence co a part of cbpA gene and a part of pRIT2T vector sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 1.3;
                                                                                                                   Sequence
                                                                                                                                                                                         penetrate paper.
    825
TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM
                                                                          Similarity
                                                                                                                   1288 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                         Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /partial 3..791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product= "Protein A-cellulose binding domain protein"
/transl_except= "(pos: 1281.1283, aa:xaa)"
/note= "Naa corresponds to in frame stop codon;
CDS does not include stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "This region cloning vector" 795...1280
                                                                                                                                                                                                                                                                                                                                                                                                                                         3b-3g; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                   523 A; 267 C; 202 G; 296 T; 0 other;
                                                                        33.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "This region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shoseyov 0;
                                                            0,
                                                                                      Score 255;
                                                                          Pred.
                                                            Mismatches
                                                                          No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   derived
                                                                        7e-123;
                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from cbp A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                     Length 1288;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIT2T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene"
                                                           0
                                                                                                                                                            contains
                                                         Gaps
                                                           0;
```

```
RESULT 13
AAF86254/c
ID AAF862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
 В
                                This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1005
                                                                                                                                                                                                 Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis .
                                                                                                                                                                                                                                                                            Kay WW,
                                                                                                                                                                                                                                                                                                                  (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vaccine; OspA;
SRS; 17E2; fus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAF86254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAF86254 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1065 ACCTATGATACATAT 1079
                                                                                                                                                                                                                                                                                                                                                                                                        17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen;
                                                                                                                                                                            Example
                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCR primer #4
 Sequence
                                                                                                                                                                                                                                                                                                      (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                  KAY W W.
BURIAN J.
                                                                                                                                                                           3; Fig 4B;
                                                                                                                                                                                                                                                                                                        KUZYK M A
                                                                                                                                                                                                                                                                            Burian J,
 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                spA; salmonid rickettsial septicaemia; rickettsial disease;
fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  used in cloning an
                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                           salmonis
  21
                                                                                                                                                                           35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
Α,
                                                                                                                                                                                                                                                                               Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    270
  32 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP
  28
  ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  optimisation
  37
  H
  0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of OspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255
```

Query Match Best Local Matches

Local Similarity les 118; Conserv

15.4%;

0

Mismatches

Score 118; pred. No.

2.4e-51; DB 22;

Length 118; Indels

0;

```
RESULT 14
AAF86252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                       δÃ
                                                    рь
                                                                            Qy
밁
                                                                                                                      Query Match
Best Local
                                                                                                           Matches
                                                                                                                                                                                                 This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRB) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of the p. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                  Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-JUL-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF86252 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCR primer #2 used in cloning an optimisation
                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   493
                                                                                                                                                               Sequence 110
                                                                                                                                                                                                                                                                                                                                                           Example 3; Fig 4B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KAYW/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BURI/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58
61
                                                      _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGGCCAGGTTACTCGTTGGCGTAATCCGGACACCGGTAACAGCTACTCTGTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAGTGAAA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTCAGAGCATGGACCAGCAGGATAAAATCAAACTGAACCAGTCTCTGGAAAAAAGTGAAA 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCCGGCCACCGGTGCGGTTGTGG 397
GCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTG
              GCGGTGTTGCCGGCCAGCTGTTCGGTAAAGGCTCTGGTCGTGTG
                                                      TGGGTTGCGCCCAGAACTTCAGCCGCCAGGAAGTTGGCGCCGCCCACCGGTGCGGTTGTGG
                                                                                                            104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KAY W W.
BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KUZYK M A.
                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Burian J,
                                                                                                           Conservative
                                                                                                                                                                BP; 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA;
                                                                                                                                                                                                                                                                                                                                                            35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kuzyk MA;
                                                                                                                                                                 A; 28 C;
                                                                                                                        13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВÞ
                                                                                                           Score 104; DB; Pred. No. 4.8
                                                                                                            0;
                                                                                                                                                                   45 G;
                                                                                                                                                                   24 T;
                                                                                                                            4.8e-44;
                                                                                                                                                                   0 other;
                                                                                                                                          DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of OspA gene
                                                                                                               0
                                                                                                                                         Length 110;
                               441
                                                                                                                Indels
     104
                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    610
                                                                                                                Gaps
                                                                                                                0;
```

δÃ

Ъ

Search completed: October 27, Job time: 197.542 secs

2002,

Qy

0;

```
RESULT 15
AAF8625%c
ID AAF8625%c
ID AAF8625%c
AC AAF862
AC AAF862
AC AAF862
AC AAF862
AC AAF862
AC AAF862
AC AAF862
AC AAF862
XX 11-ULL
XX POIKIL
KW VACCIN
KW SRS; 1
XX 17-KAF
YX 17-SEF
YX 17-SEF
YX 17-SEF
YX 17-SEF
YX 17-SEF
YX 17-SEF
YX 17-SEF
XX (KAYW,
PA (BURI,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,
PA (KUZY,

                                                                                                              밁
                                                                                                                                                                                                                                Query Match
Best Local Sim
Matches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF86255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAF86255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents a PCR primer used in the cloning and optimisation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           poikilothermic fish; Piscirickettsia salmonis; ri
vaccine; OspA; salmonid rickettsial septicaemia;
SRS; 17E2; fusion construct; PCR primer; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCR primer #5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                 Sequence 102 BP; 14 A; 23 C; 30 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence represents a PCR primer used in the cloning and optimisation the P. salmonis OspA gene. The OspA gene is used in the method of the
                                                                                                                                                                        619
42
                                                                                                        ACCTACCAGCGTTACAACAACAGGAACGGCGGTCAGCAGTACTGCCGCGAATTTCAGCAG 678
                                                    AAAGCCATGATCGCAGGTCAGAAACAGGAAATCTACGGCACC
salmonis OspA gene. The OspA gene is used in
                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; DNA; 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fig 4B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kuzyk
                                                                                                                                                                                                                                                                  13.3%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВΡ
                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                  Score 102;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                an
                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                optimisation of
                                                                                                                                                                                                                                                                                                                                                           35 T;
                                                                                                                                                                                                                                         5.4e-43;
thes 0;
                                                                                                                                                                                                                                                                                                   DB 22;
                                                                                                                                                                                                                                                                                                                                                           0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rickettsial pathogen;
a; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OspA
                                                                                                                                                                                                                                                                                                Length 102;
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease;
                                                                                                                                                                                                                                            Gaps
```

۹,

```
Title:
Perfect score:
Sequence:
      Result
No.
                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                            Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 18:35:09; Search time 1486.04 Seconds (without alignments)
10815.053 Million cell updates/sec
                                                                                 OLIGO_NUC Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-5
768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1797656 segs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                       GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgtcagttgaattctacaa.....aggtgattagcaccgaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                    gb_pr:*
gb_ro:*
gb_sts:*
gb_sy:*
gb_un:*
gb_vi:*
em_ba:*
                                                                                                                                                                                                                                                                                                 gb_ba:*
gb_htg:*
gb_om:*
gb_ow:*
gb_ov:*
gb_pat:*
gb_ph:*
                                                                               em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                 em_fun: *
em_in: *
em_in: *
em_on: *
em_or: *
em_ov: *
em_ph: *
em_ph: *
em_pl: *
em_ro: *
em_ro: *
em_un: *
                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                  3595312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              768
                                                                                                                                                                                                                                        0 0 0 0 0 0 0 0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                C
                                                                                                                                                                                                                                                                                                                                                                                               იი
                                                                                                                                                                                                                                                                                                                                                                                                                                         00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O
```

443 443	38 40 41	30 31 32 33 35 36 35 4 35 36 36 36 36 36 36 36 36 36 36 36 36 36	23 24 27 28	15 16 17 18 19 20 21	1100 1100 1100 1111 1111 1111	,
21 21 21	222222	21 21 21 21		N N N N N N N N N	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	7
						•
750 750 750 750	708 748 750 750 750	100	72 110 111 113 113 113 113 113 113 113 113	1146 1146 6760 243340 589 594 596 648	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
œ œ œ œ		& & & & & D - 1 - 1	- 9	& & & & & & & \	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,
00000	0000000	APOUZSSS APOUZSS6 APOUZSS6 AGHRCBEHA MITRGBEHA KGIRGBEHM KGIRGBEHN LAURGBEHA	AE005332 AE005325 AE005290 AE005441 AE006459 AL139161		AR001082 AR001083 AR027449 AR027449 AR058257 AR058258 I18514 I18515 I16614 I16615 I66615 I18790 AR058204 AR11733)
86499 Mic 86500 Mic 86501 Mic 86502 Mic	F422126 Microser 69708 Microseris F386496 Microser F386497 Microser	7 Escheri 6 Escheri 8 Escheris Microseri Krigia bi Krigia bi	5332 Escheric 5325 Escheric 5290 Escheric 5441 Escheric 6449 Escheric 9161 Human	50579 817 Cl 83088 01956 01959 01958 01958 01960	2 Sequenc 3 Sequenc 8 Sequenc 9 Sequenc 9 Sequenc 7 Sequence 8 Sequence Sequence Sequence Sequence Sequence Sequence 9 Sequence 9 Sequence 9 Sequence 9 Sequence	

ALIGNMENTS

Query Match Best Local	BASE COUNT ORIGIN	FEATURES Source	JOURNAL	TITLE	AUTHORS	REFERENCE		ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	DEFINITION	LOCUS	AR001082	RESULT 1
Similarity	/orga 194 a	Location	<pre>proteins Patent: US 5738984-A 1 14-APR-1998;</pre>	Kits and methods of detection using cellulose binding domain fusion	Shoseyov, 0.	1 (bases 1 to 486)	Unclassified.	Unknown.	Unknown.	•	AR001082.1 GI:3963149	AR001082	Sequence 1 from patent US 5738984.	AR001082		
33.2%; S 100.0%;	sm="un c	Location/Qualifiers 1486	8984-A 1	ds of det		486)					[:3963149		m patent			
Score 255; Pred. No.		fiers	14-APR-19	ection us									US 573898	486 bp		
33.2%; Score 255; DB 6; L 100.0%; Pred. No. 2.3e-139;	124 t		98;	ing cellu									4	DNA		
Score 255; DB 6; Length 486; Pred. No. 2.3e-139;				lose bind:										linear		
ξ.				ing d										PAT		
				omaiı										04-1		
				n fus										PAT 04-DEC-1998		
				ion										998		

Score

IJ

Description

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
AR001083/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
             RESULT 3
AR027448
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вp
                                                                                    В
                                                                                                     δÃ
                                                                                                                        Дβ
                                                                                                                                     Q
                                                                                                                                                       DЬ
                                                                                                                                                                      Qy
                                                                                                                                                                                        B
                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                    δÃ
DEFINITION
                                                       Вр
                                                                                                                                                                                                                        Query Match
Best Local S
Matches 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211
                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                                                                                                                                                                                                                                                                           271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151
                                                                                        276
                                                                                                         196
                                                                                                                        336
                                                                                                                                        136
                                                                                                                                                         396
                                                                                                                                                                                         456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16
                                                                       256
                                                                                                                                                                         76
                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTACTACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                       ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTATGATACATAT 285
                                                                       ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                  proteins
Patent: U
                                                                                                                                                                                                                                                                                                                                                                         Sequence 3 from patent US
AR001083
AR001083.1 GI:3963150
                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 486)
Shoseyov, O.
                                                                                                                                                                                                                                                                                                                  Kits and methods of detection using cellulose binding
                                                                                                                                                                                                                                                                                                                                          Unclassified
                                                                                                                                                                                                                                                                                                                                                   Unknown
                                                                                                                                                                                                                                                                                                                                                           Unknown.
       Sequence
              AR027448
                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                         33.2%; Score 255; DB 6; Liarity 100.0%; Pred. No. 2.3e-139; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                         US 5738984-A 3 14-APR-1998;
Location/Qualifiers
                                                                                                                                                                                                                                                                  /organism="unknown"
79 c 89 g
       1 from
                                                                                                                                                                                                                                                                                   . 486
       patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
       486 bp
; 5856201.
                                                                                                                                                                                                                                                                                                                                                                                            5738984.
                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                          Length 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                     linear
                 linear
                                                                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                  PAT
                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                     domain
                                                                                                                                                                                                                                                                                                                                                                                                     04-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                          255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                      ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                     JOURNAL
FEATURES
                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                    DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                   QY
                                   Дδ
                                                  QУ
                                                                                                                                                                                                                                                      RESULT 4
AR027449/c
                                                                                                     ORIGIN
                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 255; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                       271
                                                                                                                                                                                                                                                                                                        256
                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                        136
                                    456
                                                                                                                                                                                                                                                                                                                                                                                       91
                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                       31
                                   76
                                                                                                                                                                                                                                                                                                 ACCTATGATACATAT
                                                                                                                                                                                                                                                                                        ACCTATGATACATAT
          ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                      255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                             product
Patent:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown
                                                                                                                                                             1 (bases 1 to 486) Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Methods of detection using a cellulose bindi
                                                                                                                                                                                       Unclassified
                                                                                                                                                                                                       Unknown.
                                                                                                                                                                                                                       AR027449.1
                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194
                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                       33.2%; ilarity 100.0%; Conservative
                                                                    Conservative
                                                                                                              മ
                                                                                                                                              US 5856201-A 3 05-JAN-1999;
                                                                                                               /organism="unknown
79 c 89 g
                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:5938268
                                                                                                                                                                                                                                                                                                         270
                                                                             33.2%;
                                                                                                              Q
                                                                      0;
                                                                             Score 255; DB 6; L
Pred. No. 2.3e-139;
```

Mismatches

0;

Indels

0;

Gaps

0

135 397 75 Length 486

g

194

A. and Doi,R.P. binding doma

```
ACCESSION
                                                                                                                                                                                                                                             TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
                                                                                                                                         GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                         GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unclassified.

1 (bases 1 to 486)

1 (bases 1, to 486)

Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Doi,R.H.
Methods of detection using a cellulose binding domain fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AR027448
AR027448.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     product
Patent: US 5856201-A 1 05-JAN-1999;
AR027449
Sequence 3 from patent US
AR027449
                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                  Score 255; DB 6; Lo
Pred. No. 2.3e-139;
                                                                                                                                                                                                                                                                                                                                                       Mismatches
               486 bp
s 5856201
                                                                                                                                                                                                                                                                                                                                                                                                                       124
                              DNA
                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                         Indels
                              linear
                               PAT
                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                29-SEP-1999
                                                                                                                                                                                                                                                                             135
                                                                                                                                                                                                  210
                                                                                                                                                                                                                                                     150
                                                                                                                                                                                                                                                                                                                                                          0;
```

٠.,

ð

밁

0

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
SOURCE
                                                                                    RESULT 6
AR058258/c
LOCUS
                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
AR058257
REFERENCE
AUTHORS
TITLE
                                                          DEFINITION
ACCESSION
VERSION
                                                                                                                                                                              δ
                                                                                                                                                                                                    В
                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                 KEYWORDS
SOURCE
ORGANISM
                                                                                                                                           Š
                                                                                                                                                                 용
                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                          Query Match
Best Local Sir
Matches 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    336
                                                                                                                                                 256
                                                                                                                                                                   211
                                                                                                                                                                                                     151
                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       396
                                                                                                                                 271
                                                                                                                                                                                                                                       91
                                                                                                                                                                                                                                                                        31
                                                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                             I (bases 1 to 486)

1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein,M. a Cellulose binding domain proteins Patent: US 5837814-A 1 17-NOV-1998;
Location/Qualifiers
1. 486
1. 486
                                                                                                                                                                                                                                      ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATAATATTACACAAGTGAT
                                                                                                                                                                                                                                                                        ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                               GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                             GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR058257
Sequence
AR058257
                                                                    AR058258
Sequence
AR058258
                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown.
Unclassified
1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I.,
Cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AR058257.1
                          Unclassified
                                  Unknown.
                                          Unknown
                                                            AR058258.1
                                                                                                                                                                                                                                                                                                         h 33.2%;
Similarity 100.0%;
55; Conservative (
                                                                                                                                                                                                                                                                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Н
                                                                             ω
                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                                                                             from
                                                            GI:5983835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                            patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            patent US
                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                   Score 255;
Pred. No.
                                                                                                                                                                                                                                                                                          Mismatches
                                                                             Sn
                                                                            486 bp
3 5837814.
Goldstein, M. proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             486 bp
5837814.
                                                                                                                                                                                                                                                                                                                                                     124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                        and
          and
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                           Length 486
          Doi,
                                                                                                                                                                                                                                                                                                                                                                                                        Doi, R
                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAT
                                                                                       PAT
                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-SEP-1999
                                                                                       29-SEP-1999
                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                   255
                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                       135
                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                   270
                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                  RESULT 7
I18514
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
S
                 Ъ
                              Qy
                                                   ₽
                                                                QΥ
                                                                                   Вb
                                                                                                    Qy
                                                                                                                        밁
                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.
Matches 255; Conservative
                                                                                                                                                         Query Match 33.2%;
Best Local Similarity 100.0%;
Matches 255; Conservative
                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                216
                                                                                                                                                                                                                                                                                                                                                                                                                 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                   336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        456
                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                               256
                                  196
                                                    151
 256
                  211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                      91
                                                                                                       76
                                                                                                                        3
                                                                                                                                         16
                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                   GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                    ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                               GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                               ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
 ACCTATGATACATAT
                   GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                          Sequence
118514
118514.1
                                                                                                                                                                                                                            Unclassified.

1 (bases 1 to 486)
Shoseyov,O., Shpiegl,I., Goldstein,
Nucleic acids encoding a cellulose
Patent: US 5496934-A 1 05-MAR-1996;
Location/Qualifiers
                                                                                                                                                                                                                                                                                 Unknown.
                                                                                                                                                                                                                                                                                          Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent:
                                                                                                                                                                                                                                                                                                                                     I18514
                                                                                                                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US 5837814-A 3 17-NOV-1998;
Location/Qualifiers
1. 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
79 c 89 g
                                                                                                                                                                                                    /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                          from patent US
                                                                                                                                                                                                                     .486
                                                                                                                                                                                                                                                                                                                                                                                               270
                                                                                                                                                                                                                                                                                                                                                                                202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 255; DB; Pred. No. 2.3 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                          0;
                                                                                                                                                                  Score 255; DB 6; L
Pred. No. 2.3e-139;
                                                                                                                                                          Mismatches
                                                                                                                                                                                                     124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6; L
2.3e-139;
                                                                                                                                                                                                                                               binding
                                                                                                                                                          0;
                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                           Length 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                        Doi
                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                          0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                     07-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                          Gaps
                                                                                                       135
                                                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135
                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                   255
                                                    210
                                                                                      150
                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                   277
```

90

270 255 210

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                     TITLE
JOURNAL
FEATURES
                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                      DEFINITION ACCESSION
                                                                                                                                                                                                          RESULT
I66614
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                뮹
                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                       DЪ
                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                ORIGIN
                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
        Query Match
Best Local S
Matches 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                           216
                                                                                                                                                                                                                                                                                                                                                                                                                    456
                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                                                                        336
                                                                                                                                                                                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                                                                                                                                                                                               16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                            ACATCTGACAGTGATTTAAATTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                                                                                                                                                                                                                                                                                                                                                   TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                          ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255;
                                                                                                                                                                             166614
Sequence :
166614
166614.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I18515
Sequence
I18515
                                                                                   Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Doi,R.H. Methods of use of cellulose binding domain proteins Patent: US 5670623-A 1 23-SEP-1997; Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shoseyov,O., Shpiegl,I., Goldstein,M.A. and
Nucleic acids encoding a cellulose binding
Patent: US 5496934-A 3 05-MAR-1996;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unclassified.
1 (bases 1 to 486)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118515.1
                  Similarity
                                                                                                                                        Unclassified.
                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                            (bases 1 to 486)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124
                                                          194
          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                         ø
                                                                                                                                                                                                 \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 w
                                                       organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unknown"
79 c 89 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:1598870
                                                                                                                                                                                                 from patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from patent US
                                                                             .486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33.2%;
                                                                                                                                                                                                                                                          202
                                                                                                                                                                                                                                                                              270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            285
                 33.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 255;
Pred. No.
                 Score 255; DB 6; L
Pred. No. 2.3e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486 bp
s 5496934
          Mismatches
                                                                                                                                                                                                486 bp
5670623.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           194
                                                         124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.3e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ct
                                                                                                                                                                                                          DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                            Length 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Doi, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAT
         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                           29-DEC-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-OCT-1996
                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                       277
                                                                                                                                                                                                                                                                                                                                                                                                                   397
         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
166615/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                RESULT
188789
                                                                                                                             В
                                                                                                                                               QΥ
                                                                                                                                                                     D
                                                                                                                                                                                     Ωy
                                                                                                                                                                                                          Db
                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                     δÃ
                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                      Query Match
Best Local Sim
Matches 255;
                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             211
                                                                                       216
                                                                                                          256
                                                                                                                                                 196
                                                                                                                                                                     336
                                                                                                                                                                                      136
                                                                                                                                                                                                           396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                           16 TACAACTCTAACAAATCAGCACAAACAAACTCAAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                            GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGGATTATTAGGAAATAGCTAT
                                                                                                                                                                    GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                   TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT 135
                                                                                       ACCTATGATACATAT
                                                                                                 ACCTATGATACATAT
                                                                                                                                                                                                           ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                       Unknown.
Unclassified.
Unclassified.
1 (bases 1 to 486)
1 (bases 1 to 486)
1 (bases 1 to 486)
1 (bases 1 to 486)
2 (bases 1 to 486)
Methods of use of cellulose binding domain proteins Patent: US 5670623-A 3 23-SEP-1997;
Location/Qualifiers
1. 486
                    I88789
Sequence
I88789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
166615
          I88789.1
                                                                                                                                                                                                                                                                                                                                                                                                                               Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                            166615.1
                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      166615
                                                                                                                                                                                                                                                                                        Conservative
                              ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
79 c 89 g
           GI:3408729
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:2724593
                             from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                                                                                                                                                                                                                                                                                                33.2%;
                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        285
                            patent US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             patent US
                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                 Score 255; DB 6; I
Pred. No. 2.3e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             486 bp
s 5670623.
                             486 bp
s 5719044
                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                        DNA
                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                        linear
```

Gaps

0;

75

10-AUG-1998

217

277 195 337 PAT

29-DEC-1997

```
Db
                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                          DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                        RESULT 12
188790/c
                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
밁
              Ş
                                        В
                                                         δ
                                                                                  В
                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                    271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196
 336
                                                                                    456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              y Match
Local s
                                                                                                                              Local Sinhes 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91
                                                                                                        16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                        ACATCTGACAGTGATTTAAATTAAATGACGTAAAAGTTAGATATTACACAAGTGAT 135
                                                                                 TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                              ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                   ACCTATGATACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shoseyov,O., Shpiegl,I., Goldstein,M.A. and Cellulose binding domain fusion proteins Patent: US 5719044-A 1 17-FEB-1998;
Location/Qualifiers
1. 486
                                                                                                                                                                                                                           Shoseyov,O., Shpiegl,I., Goldstein,M.A. Cellulose binding domain fusion proteins Patent: US 5719044-A 3 17-FEB-1998;
                                                                                                                                                                                                                                                                                                              I88790
Sequence 3 from patent
I88790
I88790.1 GI:3408730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unknown
                                                                                                                                                                                                                                                                                Unknown
                                                                                                                                                                                                                                                                      Unclassified.
                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unclassified
                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                         (bases 1 to 486)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 486)
                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                             Conservative
                                                                                                                                                                                                      Location/Qualifiers
1. .486
                                                                                                                                                                               /organism="unknown"
79 c 89 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="unknown"
89 c 79 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33.2%;
100.0%;
                                                                                                                                      33.2%; Score 255; DB 6; I
100.0%; Pred. No. 2.3e-139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 255; DB 6; L
Pred. No. 2.3e-139;
                                                                                                                                                                                                                                                                                                                                     Sn
                                                                                                                                                                                                                                                                                                                                   486 bp
s 5719044.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                             Mismatches
                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124
                                                                                                                                                                                  r
                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                              0.
                                                                                                                                                 Length 486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 486
                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Doi, R.
                                                                                                                                                                                                                                                                                                                                                PAT 10-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                            Gaps
                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
 277
                                                                                    397
                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
 JOURNAL
FEATURES
                                       REFERENCE
AUTHORS
TITLE
                                                                                                                       DEFINITION ACCESSION
                                                                                                                                           RESULT 14
AR151733
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
AR096204
                                                                                          KEYWORDS
SOURCE
                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                ρy
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                              QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                               Вb
                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                               276
                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                           196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          276
                                                                                                                                                                                                                                       216
                                                                                                                                                                                                                                                                               156
                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                      hes 255;
                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                              GGTACACAAGGACAAACTTTCTGGTGTGACCATGCTGGTGCATTATTAGGAAATAGCTAT
                                                                                                                                                                                                                                                                                                                      ACATCTGACAGTGATTTAAATTTAAATGACGTAAAAGTTAGATATTATTACACAAGTGAT
                                                                                                                                                                                                                                                                                                                                                            GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                         ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTATGATACATAT
                                                                                                                                                                                                                                       GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                           GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTATGATACATAT 270
                                                                                                                                                                                               ACCTATGATACATAT
                                                                                                                      AR151733
Sequence 21
AR151733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AR096204
Sequence
AR096204
        1 (bases 1 to 1146)
Bryan, B.J. and Szent-Gyorgyi, C.
Buciferases, fluorescent proteins, nucl
luciferases and fluorescent proteins ar
diagnostics, high throughput screening
Patent: US 6232107-A 21 15-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 499)
Shoseyov,O. and Shani,Z.
Arabidopsits thaliana endo-1,4-.beta.-glucanase
Patent: US 6005092-A 5 21-DEC-1999;
Location/Qualifiers
                                                                                                               AR151733.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR096204.1
                                                                       Unclassified
                                                                               Unknown
                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                        197
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unknown"
93 c 82 g
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from patent US 6005092.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .499
                                                                                                               GI:15117783
                                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:10024795
                                                                                                                                                                                                                                                                                                                                                                                                              33.2%;
                                                                                                                                                                                               290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                  patent US
                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 255; DB 6; L
Pred. No. 2.3e-139;
                                                                                                                                             1146
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                 146 bp
6232107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                       127
                   nucleic acids encoding 
ns and the use thereof 
ning and novelty items
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                         Length 499
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAT 08-SEP-2000
                                                                                                                                             PAT
                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         promoter
                                                                                                                                              08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                           255
                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                          135
                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                                                                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
AX250579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Оy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
          δÃ
                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                            Matches 255;
                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCCAATAATCAAAATTACTAAC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16 TACAACTCTAACAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC 75
            16 TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTATGATACATAT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTATGATACATAT 270
1146 bp
Sequence 21 from Patent W00168824.
AX250579
                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 1146)
Bryan, B.J., Szent-Gyorgyi, C. and Szczepaniak, W.
Renilla reniformis fluorescent proteins, nucleic acids encoding fluorescent proteins and the use thereof in diagnostics, high throughput screening and novelty items
Patent: WO 168824-A 21 20-SEP-2001;
Patent: WO 168824-A 21 20-SEP-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unidentified.
unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AX250579.1 GI:15984327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unclassified
                                                                                                                                                                                                                                                                                                                                                                                             Prolume,
                                                                                                                    396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
a 222 c 247 g
                                                                                                                              /PICTEGLIG-"CAC93785.1"
/PICTEGLIG-"CAC93785.1"
/PICTEGLIG-"GJ: 15984328"
/GD_xref="GJ: 15984328"
/Crans1ation="MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKYRYYYTS
/Crans1ation="MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKPRYYYYTS
/CRANS1Ation="MSVEFYNDNYSFYNDYSFYNDYKPTSYTYDTYVEFGFASGAATL
KKGQFITIQGRITKSDWSNYTQTNDYSFDASSSTPVNPKVTGYJGAKVLGTAPGSA
GLYPRGSTAIGWKETAAAKFERQHMDSFDLGTDDDDKMGVKVLFALICIAVAEAKPTE
NNEDENITVAVAANFATTPLDAADRKKLPGKKLPLEVLKEMEANARKAGGTRGCLICLAFTL
IKCTPKNKKFIPGRCHTYEGDKESAQGGIGEAIVDIPEIPGFKDLEPMEQFIAQVDLC
VDCTTGCLKGLANVQCSDLLKKWLPQRCATFASKIQGQVDKIKGAGGD"
                                                                                                                                                                                                                                                                                                                  /organism="unidentified"
/db_xref="taxon:32644"
/note="Gaussia"
                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1. .1146
                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                           /note="Nucleotide sequence encoding a CBD-Gaussia
luciferase fusion protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.2%;
                                                           33.2%;
                                                                                                                                                                                                                                                                                                                                                                                             (US) ; Bryan, Bruce J.
                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 255; DB 6; L
Pred. No. 2.4e-139;
                                             0;
                                                           Score 255;
Pred. No.
                                                                                                                   247 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281
                                                                                                                      281 t
                                                           2.4e-139;
                                                                          DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                              (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acids encoding
                                                                        Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT 05-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                0;
```

```
Qy
                                                                                                         В
                                                                                                                     Ωy
                                                                                                                                  Дb
                                      δÃ
                                                    Dρ
                                                                 Š
                                                                              망
Search completed: October 27, 2002, 21:53:00 Job time : 1490.04 secs
                           DЬ
                                                      196
                                                                  196
                                                                               136
                                                                                             136
                           256
                                        256
                                                                                                         76
                                                                                                                      76
                                                                                                                                   16
                          ACCTATGATACATAT 270
                                                     TACAACTCTAACAAATCAGCACAAACAAACTCAATTACACCAATAATCAAAATTACTAAC
                                                          GTTGATAACACTAGCAAAGTGACAGCAAACTTCGTTAAAGAAACAGCAAGCCCAACATCA 255
                                                                                                                                       75
```

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
::
       score q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
     477
472
472
245
245
245
245
149.5
1121.5
100.5
85
83
83
83
83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /cgn2_6/ptodata/1,
3: /cgn2_6/ptodata/1,
4: /cgn2_6/ptodata/1,
5: /cgn2_6/ptodata/1,
6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-677-374-6
1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    231628 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MSVEFYNSNKSAQTNSITPI...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 10:56:01;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
                       GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/Packfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
     382
162
162
162
162
163
163
163
163
1493
1493
1426
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
17516
175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0
US-09-136-574A-44
US-09-033-537A-1
US-07-962-588b-2
US-07-910-760-12
US-08-440-549-12
US-08-444-818-68
US-08-444-818-20
US-08-444-818-20
US-08-867-611-48
US-08-867-611-48
                                                                                                                                                                                                     US-09-277-716-22

US-08-048-164A-2

US-08-460-465-2

US-08-460-455-2

US-08-460-455-2

US-08-30-394A-2

US-09-006-632-7

US-09-330-394A-29

US-08-330-394A-29

US-08-330-394A-29

US-09-138-55-12

US-09-138-55-12

US-09-138-554A-43

US-09-136-574A-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Search time 13.2642 Seconds
(without alignments)
471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                      Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Sequence
Sequence
   Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
 2, Appli
2, Appli
2, Appli
2, Appli
2, Appli
2, Appli
3, Appli
3, Appli
10, Appli
11, Appli
12, Appli
13, Appli
14, Appli
12, Appli
12, Appli
13, Appli
14, Appli
12, Appli
12, Appli
12, Appli
13, Appli
14, Appli
12, Appli
12, Appli
12, Appli
13, Appli
14, Appli
15, Appli
16, Appli
17, Appli
18, Appli
19, Appli
19, Appli
10, Appli
11, Appli
11, Appli
11, Appli
12, Appli
12, Appli
13, Appli
14, Appli
16, Appli
17, Appli
18, Appli
19, Appli
19, Appli
19, Appli
10, Appli
11, Appli
11, Appli
11, Appli
12, Appli
12, Appli
13, Appli
14, Appli
15, Appli
16, Appli
17, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 1
US-09-277-716-22
                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL
                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                    121
                                                                                                                                                                                                                              61
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83
6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
2772	2261	1786	992	973	971	970	970	970	859	781	781	739	613	599	599	597	597
4	4	4	4	4	4	4	_	_	4	σ	4	4	4	σ	4	J	4
US-08-444-818-89	US-08-444-818-66	US-08-444-818-54	US-08-867-611-54	US-08-867-611-53	US-08-867-611-52	US-09-090-793-5	US-08-752-929-7	US-08-375-709-7	US-08-444-818-30	PCT-US92-06965A-9	US-08-867-611-4	US-08-444-818-148	US-08-867-611-49	PCT-US92-06965A-23	US-08-867-611-18	PCT-US92-06965A-21	US-08-867-611-16
Sequence 89, Appl	Sequence 66, Appl	`	Sequence 54, Appl	Sequence 53, Appl	Sequence 52, Appl	Sequence 5, Appli	Sequence 7, Appli	Sequence 7, Appli	Sequence 30, Appl	9	Sequence 4, Appli	Sequence 148, App	•	•	Sequence 18, Appl	Sequence 21, Appl	•

ALIGNMENTS

```
RESULT 2
US-08-048-164A-2
US-08-048-164A-2
Esquence 2, Application US/08048164A
Patent No. 5496934
GENERAL INFORMATION:
APPLICANT: Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , OTHER INFORMATION: Cellulose Binding Domain (CBD)-Gaussia luciferase fusion prote US-09-277-716-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EARLIER FILING DATE: 1998-06-15
EARLIER APPLICATION NUMBER: 60/079,624
EARLIER FILING DATE: 1998-03-27
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PATENTIN VET. 2.0
SEQ ID NO 22
LENGTH: 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 22, Application Patent No. 6232107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Szent Gyorgyi, Christopher
APPLICANT: PROLUME, LTD.
TITLE OF INVENTION: LUCIFERASES, FLUORESCENT PROTEINS, NUCLEIC ACIDS ENCODING THE
CURRENT APPLICATION UNMBER: US/09/277,716A
CURRENT FILING DATE: 1999-03-26
EARLIER APPLICATION NUMBER: 60/102,939
EARLIER FILING DATE: 1998-10-01
EARLIER APPLICATION NUMBER: 60/089,367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Bryan, Bruce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT ORGANISM: Artificial Sequence: fusion protein
                                                                                                                                                                                                                                      118 NFSRQ-----EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGA-VLGGLIGS 162
                                                                                                                                                                                                                                                                                                           61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCL---QGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                         1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                          NYTQTNDYSFDASSSTPVVNPKVTGY---
                                                                                                                                                                                                                                                                                     LGNSYVDNTSKVTANFVKETASPTSTYDTYVEFGFASGAATLKKGQFITIQGRITKSDWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36.0%;
62.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09277716A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 480.5; DB
Pred. No. 4.1e-41
10; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                             IGGAKVLGTAPGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
```

APPLICANT:
APPLICANT:

Shpiegl, Itai Goldstein, Marc A.

NUMBER OF SEQUENCES: 21

CORRESPONDENCE ADDRESS:

ADDRESSEE:

```
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-048-164A-2
                                                                                                                                                                                                                                                                                                                                                                            US-08-460-462-2
                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08460462 Patent No. 5670623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Shoseyov, Oded
APPLICANT: Shoiegl, Itai
APPLICANT: Goldstein, Marc A.
APPLICANT: Goldstein, Marc A.
APPLICANT: Doi, Roy H.
TITLE OF INVENTION: METHODS OF USE OF CELLULOSE BINDING DOMAIN PROTEINS
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (212) 869-8864/9
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: New York
STATE: New York
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/048,164A FILING DATE: 14-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                match 35.7%;
Local Similarity 97.8%;
es 90; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MSVEEYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                          COUNTRY:
                                                                                                                                                             STREET:
                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10036
                                                                                                                       New York
                                                                                         10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: PENNIE & EDMONDS
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 amino acids
                                                                                                                                                             1155 Avenue of the Americas
                                                                                                          U.S.A.
                                                                                                                                                                                  PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7809-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 477; DB 1;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-460-462-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
US-08-460-457-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 35...
Best Local Similarity 97.6
Matches 90; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08460457 Patent No. 5719044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 7809
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEPHONE: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 08 FILING DATE: 14-APR-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                         STREET: LLC STREET: New York CITY: New York
                                                                                                                                     FILING DATE: concurrently herewith CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US 08/048,164
APPLICATION NUMBER: US 08/048,164
                                                                                                                                                                                                                                                                                                                     ZIP: 10036
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Shoseyov, Oded APPLICANT: Shpiegl, Itai
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 780;
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                    FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Doi, Roy H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN FUSION PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: CC
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/460,462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                            APPLICATION NUMBER: US/08/460,457
                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          t: 162 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                           E: PENNIE & EDMONDS
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shpiegl, Itai
Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7809-006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 477; DB 1; pred. No. 2.7e-41;
                                                          7809-008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                       Version #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1; Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

0,

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                   ; MOLECULE TYPE: US-08-460-458-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-460-458-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-460-457-2
 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08460458 Patent No. 5738984
                                                           Matches
                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                 TELEFAX: (212) 869-8864/9.
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acids
TYPE: amino acid
TOPOLOGY: line
                                                                                                                                                                                                                                               NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 780
TELEPHONE: (212) 790-9090
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: III.
CITY: New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                        TELEPHONE: (214) / TELEPHONE: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/460,458 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
 6
MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10036
                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66141 PENNIE
                                                                                                                                                                          162 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shoseyov, Oded
                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           Patentin Release #1.0, Version #1.25
                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Floppy disk
                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KITS AND METHODS OF DETECTION USING CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35.7%;
97.8%;
                                                                        35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ب</u>
                                                        Score 477; DB 1;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                                7809-007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 477; DB 1; Length 162; Pred. No. 2.7e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                          0,
                                                                                  Length 162;
                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

US-08-330-394A-2

Sequence 2, Application US/08330394A Patent No. 5856201

GENERAL INFORMATION:

APPLICANT: APPLICANT: APPLICANT:

Shoseyov, Oded Yosef, Karmey Shpiegl, Itai Goldstein, Marc /

```
; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-460-455-2
                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
US-08-460-455-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
    밁
                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. 5837814
GENERAL INFORMATION:
                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                       TELEFAX: (212) 869-8864/9
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Shoseyov, Od
APPLICANT: Shpiegi, Ita
APPLICANT: Goldstein, M
APPLICANT: Doi, Roy H.
APPLICANT: Doi, ROY H.
                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08 FILING DATE: 14-APR-1993 ATTORNEY/AGENT INFORMATION: NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS: LENGTH: 162 amino acids
                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 781
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1155 AV
CITY: New York
STATE: New York
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/460,455 FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                               1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                                                MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                                                                                              90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08460455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                       : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shpiegl, Itai
                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CELLULOSE BINDING DOMAIN PROTEINS
                                                                                                                                           35.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                                   18,872
                                                                                                                            2,
                                                                                                                                                                                                                                                                                                                                                                       7809-009
                                                                                                                                           Score 477; DB 2; Pred. No. 2.7e-41;
                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92
                                                                                                                              0
                                                                                                                                                         Length 162;
                                                                                                                              Indels
                                                                                                                            0,
                                                                                                                           Gaps
                                                                                                                              0
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                 US-09-006-636-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-330-394A-2
                                                                                                                                                                                                                                                                                                                                          Sequence 7, Application US/09006636 Patent No. 6005092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: DOI, ROY H
TITLE OF INVENTION: M
TITLE OF INVENTION: C
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NFORMATION FOR SEQ ID NO:
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                     ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatik
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: MISROCK, S. LESLIE 78 REFERENCE/DOCKET NUMBER: 78 TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP |
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                     TITLE OF INVENTION: ARABIDOPSIS THALIANA ENDO-1,4-BETATITLE OF INVENTION: GLUCANASE GENE, PROMOTER AND PROTEI
                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (¿1,

TELEFAX: (¿1,

TELEFAX: 66441 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 97.8 nes 90; Conservative
                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/01
FILING DATE: 27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: NEW YORK STATE: NEW YOR
                                                                                                                                                                                 STREET:
                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     66 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEW YORK
                                                                                                                                                                               E: Pennie & Edmonds LLP
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: PENNIE & EDMONDS
1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                                                                                                                          Shani, Ziv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (212) 869-8864
                                                                                                                             USA
                                                                                                                                                                                                                                                                                                         Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             METHODS OF DETECTION USING THE CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/330,394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 477; DB 2; Le
Pred. No. 2.7e-41;
""" amatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7809-005
                                                                                                                                                                                                                                                     PROMOTER AND PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT 9
US-09-006-632-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-09-006-636-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 7, Application US/09006632 Patent No. 6184440 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                              TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
                                                                                                                                 REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Baldwin, Geraldine F.
REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 7809-019
TELECOMMUNICATION INFORMATION:
                                                  SEQUENCE CHARACTERISTICS
                                                                                                                                                                                CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Baldwin, Geraldine F.
                                                                                                                                                                                                                                                                       SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Shosey APPLICANT: Shani,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Shpigel, Etai
TITLE OF INVENTION: TRANSGENIC PLANTS OF ALTERED
TITLE OF INVENTION: MORPHOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212, TELEFAX: 66141 PENNIE
                                                                                                 TELEFAX:
                                                                                                                                                                    REGISTRATION NUMBER:
                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                            STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                            CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
STRANDEDNESS:
                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Pennie & Edmonds LLP STREET: 1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
                               ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90;
                                                                                                                                                                                                                                                                                                                                                                             10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                            NΥ
                           163 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    163 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                 (212) 790-90
(212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoseyov, Oded
Shani, Ziv
                                                                                                                                                                                                                                                                                                                       IBM Compatible
                                                                                                                                                                                                                                                                                                                                          Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                     790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                          DOS
                                                                                                                                                                                                                                                        us/09/006,632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us/09/006,636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 477; DB 3; Pred. No. 2.7e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-08-330-394A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-006-632-7
                                           망
                                                                         á
                                                                                                                                                                     ; MOLECULE TYPE: protein US-08-330-394A-29
                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                           Matches
                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 29: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/330,394A
FILING DATE: 27-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP OF PCT/US94/04132
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
NAME: MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: METHODS OF DETECTION USING TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                      TELEFAX: (214) CONTROL TELEX: 66441 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                 62
                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                     TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                 LENGTH:
                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                               _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 66
GNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                                             SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 98
                                               SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRY: U.S.A.
10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       similarity 97.8%;
                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/08330394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1155 AVENUE OF THE !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dol, Roy H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yosef, Karmey
Shpiegl, Itai
Goldstein, Marc A.
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  peptide
                                                                                                                                                                                                                                                                                             869-8864
                                                                                                                        35.4%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                       Score 472; DB 2;
Pred. No. 8.2e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 477; DB 4;
Pred. No. 2.7e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4; Length 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                         0;
                                                                                                                                      Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                         0;
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11
US-08-330-394A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                     ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-330-394A-22
                                                                                                                                                                                                                                   Qy
                                                                                                                               PCT-US95-13813-9
                                                                             Sequence 9, Applicati
GENERAL INFORMATION:
APPLICANT: Yeda R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 22
                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP
FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: DOI, ROY H.
TITLE OF INVENTION: METHODS OF DETECTION USIN
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
NUMBER OF SEQUENCES: 33
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                   APPLICANT:
                                                    APPLICANT:
                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (21. 66441 / SF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 1155 A
CITY: NEW YORK
STATE: NEW YOR
                                                                                                                                                                                                                    35.4%;
Local Similarity 97.8%;
les 89; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: MISROCK, S. LESLIE REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 27-OCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: PENNIE & EDMONDS STREET: 1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                    61 GNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                   1 SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 60
                                                                                                                                                                                                                                                                                   2 SYEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2, Application US/08330394A 5856201
                                                                                                                Application PC/TUS9513813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156 amino acids
                                             Yeda Research and Development Co. Ltd. Ramot University Authority for Applied Research and Industrial Development Lt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shoseyov,
                                 Technion Research and Development Foundation Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yosef, Karmey
Bayer, Edward A.
Morag, Ely
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METHODS OF DETECTION USING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/330,394A
                                                                                                                                                                                                                                                                                                                                  Score 472; DB 2;
Pred. No. 8.4e-41;
2; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7809-005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Version #1.30
                                                                                                                                                                                                      91
                                                                                                                                                                                                                                     92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91
                                                                                                                                                                                                                                                                                                                                                                     Length 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE
                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                    Gaps
```

TITLE OF INVENTION: MOTITLE OF INVENTION: PINUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS

ADDRESSEE:

E: Browdy and Neimark 419 Seventh Street N.W., Ste. 300

STREET: 410 -

APPLICANT:

Lamed, Shoham,

MODIFIED CELLULOSE-BINDING DOMAIN (CBD)
PROTEINS AND USE THEREOF
: 9

Raphael

```
APPLICANT: Longe, Niels Erik K.
APPLICANT: Bjornvad, Mads E.
APPLICANT: Schnorr, Kirk
TITLE OF INVENTION: Pectin Degrading Enzymes From Bacillus
TITLE OF INVENTION: Licheniformis
FILE REFERENCE: 5377.200-US
CURRENT APPLICATION NUMBER: US/09/198,956
CURRENT FILING DATE: 1998-11-24
EARLIER APPLICATION NUMBER: 1344/97
EARLIER APPLICATION NUMBER: 1344/97
EARLIER APPLICATION NUMBER: 60/067,240
EARLIER APPLICATION NUMBER: 05/067,240
EARLIER FILING DATE: 1997-12-02
NUMBER OF SEQ ID NOS: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TOPOLOGY: linear; MOLECULE TYPE: peptide PCT-US95-13813-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
US-09-198-956-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 628-5197
TELEFAX: (202) 737-3528
TELEYAX: (203) 737-3528
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 167 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 18.4%;
Best Local Similarity 51.5%;
Matches 53; Conservative 16
                                                                                                                                                                                                                                                                                                                                                  GENERAL
                                                                                                                                                                                                                                                                                                                                                                Sequence 10, Application US/09198956 Patent No. 6165769
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                         APPLICANT: Andersen, Lene N
APPLICANT: Schulein, Martin
                   SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Browdy, Roger L.
REGISTRATION NUMBER: 25,6
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/US95/13813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA AI 67
                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BAYER-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 245; DB 5; Length 167; Pred. No. 1.7e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

ω

```
; LENGTH: 493
; TYPE: PRT
; ORGANISM: Bacillus licheniformis
US-09-198-956-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
US-09-198-955A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILLING DATE: 1344/97
PRIOR APPLICATION NUMBER: 1344/97
PRIOR FILLING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/067,249
PRIOR FILLING DATE: 1997-12-02
PRIOR APPLICATION NUMBER: 60/067,240
PRIOR FILLING DATE: 1997-12-02
PRIOR APPLICATION NUMBER: 09/073,684
PRIOR FILLING DATE: 1998-05-06
PRIOR FILLING DATE: 1998-05-06
RESULT 15

US-09-136-574A-43

; Sequence 43, Application US/09136574A

; Patent No. 6294366
                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                      US-09-198-955A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 12, Application Patent No. 6187580
                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Kongsbak, Lars
TITLE OF INVENTION: No. 6187580el Pectate Lyases
FILE REFERENCE: 5378.200-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/198,955A
CURRENT FILING DATE: 1998-11-24
PRIOR APPLICATION NUMBER: 1343/97
PRIOR FILING DATE: 1997-11-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                   LENGTH: 493
TYPE: PRT
ORGANISM: Clostridium thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                335 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            394 IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 LGN--SYVDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    335 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 393
                                                                                                        394
                                                                                                                                      61 LGN--SYVDNTSKVTANEVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                             / Match 18.4%; Score 245; DB 4; Length 493; Local Similarity 51.5%; Pred. No. 8.3e-17; nes 53; Conservative 16; Mismatches 30; Indels
                                                                                                                                                                                              1 MSVERYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 09/:
FILING DATE: 1998-11-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION:
                                                                                                      FastSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glad, Sanne O. S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kauppinen, Markus
Schnorr, Kirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Moller,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bjornvad, Mads E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lange, Niels E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schulein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Andersen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Soren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09198955A
                                                                                                                                                                                                                                                                                                                                                                                                                                                               09/184,217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 245; DB 4;
Pred. No. 8.3e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 493;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                              w
••
```

```
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: No. 6294366e
SEQUENCE DESCRIPTION: SEQ ID NO: 43:
US-09-136-574A-43
                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                    á
Search completed: October 27, 2002, 11:00:30 Job time: 15.2642 secs
                                                                                                                         Ş
                                                                                                                                                                 밁
                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                          Ouery Match 11.2%; Score 149.5; DB 4; Length 1426; Best Local Similarity 32.9%; Pred. No. 2.4e-06; Matches 50; Conservative 16; Mismatches 35; Indels 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEX: <Unknown>
INFORMATION FOR SEQ ID NO: 43:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL IMPORMATION:
APPLICANT: Farrington, Gral
Anderson, Paige
Gibbs, Moreland
                                                                                                                                                                                                                                              COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: LBM COMPATION:

OPERATING SYSTEM: DOS

CURRENT APPLICATION NUMBER: US/09/136,574A

FILING DATE: 19-Aug-198

CLASSIFICATION LONGARTION:

CLASSIFICATION UMBER: US 08/932,571

FILING DATE: September 19, 1997

ATTORNEY/AGENT INFORMATION:

NAME: Bak, MATY E.

REFERENCE/DOCKET NUMBER: 1997US001/CIP

TELECOMMUNICATION:

TELEPHONE: 215-540-9200

TELEFAX: 215-540-5818

TELEY.X - CINAROWNS
                                                                                     496
                                                                                                          119 FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSM 149
                                                                                                                                                                 474 A----SNVTFNFVK-LSSGVSGADYYL----
                                                                                                                                                                                        59 ALLGNSYDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 49
CORRESPONDENCE ADDRESS:
ADDRESSEE: Howson and Howson
STREET: Spring House Corporate Center, P.O. Box 457
CITY: Spring House
STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Daniels, Roy
Morgan, Hugh W.
Williams, Diane P.
TITLE OF INVENTION: Compositions and Methods for
Treating Cellulose Containing Fabrics Using Truncated
Cellulase Enzyme Compositions
                                                                                  ----EVGFSSG-----AGQLQPGKDAGDIQV 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1426 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bergquist, Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Graham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ~
                                                                                                                                                                                                                                                                                                                            51;
                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                              6
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB DB
                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length:
                                                                                                                                                                                                           Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               October 27, 2002, 10:55:57; Search time 34.487 Seconds (without alignments) 824.509 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                747574 seqs, 111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-677-374-6
1335
 100.0
62.3
61.0
36.5
36.5
36.5
36.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                               10:
112:
113:
114:
116:
116:
118:
119:
120:
                                                                                                                                                                                                                                                                                                                                                                                  SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*

SIDSI/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Geneseq_032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS1/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1987.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1986.DAT:*
                                                                                                                                                                                                                         Length DB
 256
161
162
162
190
328
341
162
163
342
3428
   2225222222
                                                                                                                                                                                                                           IJ
AAB81128
AAB81127
AAG81126
AAB81126
AAE05746
AAE05749
AAE05747
AAR65747
AAR65747
AAR65747
                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             747574
             Optimised OspA pro
Piscirickettsia sa
OspA antigen amino
Clostridium cellul
Chimeric S peptide
Clostridium cellul
Cellulose binding
Clostridium cellul
Clostridium cellul
                                                                                                                                                                                                                       Description
                                                                                                                                                                                      C17E2 OspA constru
 Gaussia luciferase
```

4 4 5	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
91.5 91.5	-	92	92	92	95	95	98	98	98	100.5	101.5	102	102.5	102.5	111	112	113.5	122.5	126.5	127.5	148.5	148.5	149.5	245	245	245	245	245	245	472	472	477
6. 99	6.9																				11.1			18.4			18.4	•	•	35.4	35.4	35.7
285 285	285	285	285	285	2309	309	922	922	922	700	154	782	230	223	224	20	499	551	1350	1352	1751	616	1426	1853	531	493	493	476	167	156	154	162
21 22	21	22	21	20	22	22	21	20	20	12	11	12	20	20	22	22	14	18	22	22	20	20	20	19	18	20	20	21	17	20	20	20
AAY73440 AAG93288	AAY87280	AAU29025	AAB44244	AAY41688	ABB66232	ABG15906	AAY95548	AAW88419	AAY34597	AAR13227	AAR05799	AAR15625	AAY34362	AAY34487	AAB20105	AAB81130	AAR42122	AAW18790 .	AAG63963	AAG63962	349	AAY13494	AAY13492	10	AAW15238	21	AAY28850	AAY54123	AAR95080	AAW90080	AAW90081	AAW90077
Human secreted pro Human protein HP10	Human signal pepti	PRO polypep	PRO284	Human PRO284 prote	ဓ္	2			₹	Novel endoglucanas	PBOMP-2 gene prod.	Cellulase AE-1. A	Porphorymonas ging	Porphorymonas ging	Moraxella catarrha	B-cell epito	NK-1 cellulase. B	Corrected Bacillus	_			Truncated cellulas	Truncated cellulas	C. thermocellum ce	Scaffoldin protein	Pectate lyase CBD	Pectate lyase-link	A mannanase-linker		. cellulovorans	C. cellulovorans C	. cellulovorans

ALIGNMENTS

AAB81128 RESULT 1

AAB81128 standard; Protein;

256

B

11-JUL-2001 (first entry)

AAB81128;

```
Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct.
                   17-SEP-1999;
                                     17-SEP-1999;
                                                                           CA2281913-A1
                                                                                                                                          Key
Region
                                                                                                                                                                                 Piscirickettsia
                                                                                                                                                                                                                                        C17E2 OspA construct with N-terminal fusion partner
(KAYW/) KAY W W.
                                                        17-MAR-2001
                                                                                                                                                                        Synthetic
                                                                                                                         Region
                    99CA-2281913
                                      99CA-2281913.
                                                                                                                                                                                 salmonis.
                                                                                            /label= Undefined_N-terminal_fusion_partner
96..256
/label= C17E2_OspA
/note= "Product of OspA gene optimised for expression in
Escherichia coli"
                                                                                                                                                    location/Qualifiers
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
RRESULT 2
AABBILT 7
ID AABBI
XX AABB
AC AABB
AC AABB
XX AABB
COT 11-J
XX POIN
KW POIN
KW VACC
KW VACC
OS PISC
OS Synta
XX Reg
FH Key
FR Reg
                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, OspA in the form of a vaccine tish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen in the protecting animals, or a monis. The method is also useful for protecting against salmonid rickettsial septiceemia (SRS) and other rickettsial diseases. The present sequence represents the amino acid sequence of C17E2, a p. salmonis OspA construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a vaccine to create an anti-OspA antibody response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for protecting polkilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAF86248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                              Optimised OspA protein 17E2 amino acid sequence.
                                                                                                                                                                                                                                  AAB81127 standard; Protein; 161 AA
                                                                                                         Poikilothermic vaccine; OspA;
                                                                                                                                                                             11-JUL-2001
                                                 Synthetic
                                                               Piscirickettsia
                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
       Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-316844/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                              RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                  ACPOPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                                      RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                         ACPOPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                               (first entry)
                                                                                                         fish; Piscirickettsia salmonis; rickettsial pathogen; salmonid rickettsial septicaemia; rickettsial disease
                                                                  salmonis
            Location/Qualifiers 109..128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1335; DB 22;
Pred. No. 1.5e-122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                     disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT 3
AAG78025
                                                                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                        Вр
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (KAYW/) KAY W W.
(BURI/) BURIAN J.
(KUZY/) KUZYK M P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Pisciriokettsia salmonis. The method comprises administering an immunogenic amount of a salmonis specific antigen termed OspA, or an immunogenic fragment of p. salmonis specific antigen termed OspA, or an immunogenic fragment of p. salmonis poikilothermic fish, against the bacterial pathogen particularly poikilothermic fish, against the bacterial pathogen particularly. The method is also useful for protecting against salmonid p. salmonis. The method is also useful for protecting against salmonid prickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents optimised p. salmonis OspA protein 17E2. The DNA sequence represents optimised p. salmonis OspA protein 17E2. The DNA encoding OspA 17E2 (AARB6247) has been optimised for expression in encoding OspA 17E2 (AARB6247) has been optimised for expression in Ecsherichia coli. An OspA protein with an N-terminal fusion partner is Ecsherichia coli. An OspA protein with an N-terminal fusion partner is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-316844/34.
N-PSDB; AAF86247.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kay WW, Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 5; 35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                     AAG78025 standard; Protein;
                                                          piscirickettsia salmonis; piscirickettsiosis; salmonid rickettsial;
septicaemia; SRS; surface antigen; vaccine; antibacterial; fish;
                                                                                                       Piscirickettsia salmonis polypeptide P10.6.
                                            septicaemia;
ATCC VR-1361
                                                                                                                                      15-JAN-2002
                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                216
              Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                            156
                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                           LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE 215
                                                                                                                                                                                                                                                                                                 RRQQYCREFQOKAMIAGQKQEIYGTACPQPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                            LGGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE
                                                                                                                                                                                                                                                                                  RRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BURIAN J.
KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 100
51; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99CA-2281913.
                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label= B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                            162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 832; DB 22;
Pred. No. 1.6e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                            AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
RRESULT 4
AABBILT
AABBILT
AC AABBE
XX AABBE
XX AABE
XX AABE
DT 11-J
T 11-J
T 12-J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SXCCCCCXXXXIII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-MAR-2000;
01-JUL-2000;
01-JUL-2000;
29-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Simard
Burzio
                                                                                                        Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to nucleic acid sequence of a least part of the surface antigen present salmonis for production of a vaccine with antiprotect fish against P. salmonis which causes known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                    Poikilothermic vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New nucleic acids encoding an amino acid sequence homologous to
surface antigen present on Piscirickettsia salmonis are useful t
protect fish against piscirickettsiosis .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-639050/73.
N-PSDB; AAH79040.
                                                                                                                                                                      Piscirickettsia
                                                                                                                                                                                                                                                                                                     OspA antigen
                                                                                                                                                                                                                                                                                                                                                                                         AAB81126;
                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB81126 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (AQUA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200168865-A2
    17-MAR-2001
                                          CA2281913-A1
                                                                                                                                                                                                                                                                                                                                               11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RQQYCREFQQKAMIAGOKQEIYGTACPQPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RGCLQGSSLITISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6; Fig 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĽZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   antigen
fish aga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AQUA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000GB-0005838.
2000GB-0016080.
2000GB-0016082.
2000GB-0018599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HEALTH
                                                                                                                                                                                                                                                                                                  amino acid sequence
                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   against piscirickettsiosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-GB01055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۶
ج
                                                                                                                                                                                                                                    fish; Piscirickettsia salmonis; salmonid rickettsial septicaemi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25pp; English
                                                                                                                                                                        salmonis
                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ή
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EURO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61.0%;
98.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to nucleic acid sequences and the encoded persurface antigen present on Piscirickettsia on of a vaccine with antibacterial activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jones
                                                                                    B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 815; DB Pred. No. 7.6e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Griffiths
                                                                                                                                                                                                                                      septicaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 22;
.6e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  piscirickettsiosis,
                                                                                                                                                                                                                                                        rickettsial pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Valenzuela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         are useful to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            סי
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to
, also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RRESULT 5
AAE05746
ID AAE0746
AC AAE0
XX AAE0
XX AAE0
XX Clos
XX Poly
KW Poly
KW Yarn
KW Clos
KW Cub-
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           salmonis. The method comprises administering an immunogenic amount of a p. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals particularly poikilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The presents P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia
                                                                                                                    Clostridium
                                                                                                                                                                                         durability;
                                                                                                                                                                                                                  Clostridium
                                                                                                                                                                                                                                                                 Polysaccharide modification;
                                                                                                                                                                                                                                                                                                             Clostridium cellulovorans cellulose
                                                                                                                                                                                                                                                                                                                                                          24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE05746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-SEP-1999;
                                                                                                                                                                                                                                           yarn;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-316844/34.
DB; AAF86246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RQQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                               , Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BURIAN J
KUZYK M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KAY W
                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fig
                                                                                                                                                                               rescale; biological crosslinker; mechanical property; cellulovorans cellulose binding domain; wet strength; elasticity; CBBclos; cellulose binding professionals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162 AA;
                                                                                                                    cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . U . W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2в;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61.0%;
98.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 815; DB Pred. No. 7.6e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                           binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 22;
1.6e-72;
                                                                                                                                                                                                                                                                                                                domain-180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                 domain;
                                                                                                                                                                                                                                                                                                                (CBD-180).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         animals,
                                                                                                                                                                                                                                                                 paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

WO200134091-A2

```
RESULT 6
AAE05749
                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          80
DXXXXI
                                                                                                                                                                              QY
                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                 Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to methods and compositions for cross-
CC linking and/or modifying the properties of polysaccharide materials.
CC linking and/or modifying the properties of polysaccharide materials.
CC representation of the polysaccharide structure with a
CC polysaccharide binding domain (PBD) fusion protein. The method is
CC used to alter the structural, chemical, physical, electrical and
CC mechanical properties of polysaccharide materials such as paper,
CC yarns, fibers and textiles, using biological crosslinking agents.
CC The polysaccharide containing materials have improved mechanical
CC properties such as wet strengths, durability and elasticity. The PBD
CC properties such as wet strengths, durability and elasticity. The PBD
CC reagent is applied in the forming stage in fluting paper manufacture
CC which eliminates the sizing step. The use of a biological crosslinker
CC the fine fibers in a slurry therefore resulting in better recovery of
CC the fine fibers in a slurry therefore resulting in better recovery of
CC the phasnose the shillty of the albeliane of the hinding to
                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity Matches 116; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is Clostridium cellulovorans cellulose binding domain (CBD)-180. CBD-180 contains 180 amino acids of C. cellulovorans CBD (CBDclos) of cellulose binding protein A (CBP A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 1.2; Fig 1e-1g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Levy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CBDT-) CBD TECHNOLOGIES LTD.
(YISS ) YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     penetrate paper.
        24-SEP-2001
                                                                       AAE05749 standard; Protein;
                                        AAE05749;
                                                                                                                                                       154
                                                                                                                                                                                   239
                                                                                                                                                                                                                    112
                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                                                                                                                                           2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                         GTACPQPD 246
                                                                                                                                                                                                                                                 EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY 238
                                                                                                                                                                                                                                                                                                         RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-----
                                                                                                                                                       GTA-PGPD 160
                                                                                                                                                                                                                    ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAD11043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nussinovitch A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            190 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0164140
99US-0166389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36.5%;
                                                                                                                                                                                                                                                                                      FGFASGRATL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12;
                                                                            328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 487; DB 22;
Pred. No. 1.4e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                            Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30;
                                                                                                                                                                                                                                                                                        KKGQFITIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                           -KVTGYIGGAK--VL 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                          92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
```

```
The present invention relates to methods and compositions for cross-
Clinking and/or modifying the properties of polysaccharide materials.
Clinking and/or modifying the properties of polysaccharide materials.
Clinking and/or modifying the properties of polysaccharide structure with a
Clinking and involves treating the polysaccharide structure.
Clinking in the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper,
Clinking in the structural containing biological crosslinking agents.
Clinking in the structural containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD properties such as wet strengths, durability and elasticity. The PBD cragent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker converse the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of containing the paper products. The paper maintains conditions contains the paper products of the sine paper maintains the paper products.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Polysaccharide modification; polysaccharide binding domain; PBD; yarn; fiber; textile; biological crosslinker; mechanical propert wet strength; durability; elasticity; cellulose binding domain; chimeric protein; S peptide-cellulose binding domain-S protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chimeric S peptide-cellulose binding domain-S protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chimeric -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Spep-CBD-Sprot; bovine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       02-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAD11046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 4; Fig 4b-4g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           desired structural,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CBDT-) CBD TECHNOLOGIES LTD.
(YISS ) YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
Sequence
                                                                                                                                                                                                                  The present sequ
                                                                                                                                                                                                                                                                              which enhances the ability of the alkaline
                                                                                                                                                                                 (Spep-CBD-Sprot), a
                                                        ID NO: 10
                                                                                                                                                          bovine.
                                                                                               ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-457121/49
                                                           This sequence is stated to be the same as that shown as D NO: 10 in the sequence listing of the specification. He sequence has 2 additional residues at its C-terminal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clostridium cellulovorans
   328
                                                                                                                                                                                 sequence is S peptide-cellulose binding domain-S prot), a fusion protein derived from Clostridium c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0164140.
99US-0166389.
   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Encoded by TAG"
327..328
/note= "These residues are absent in the sequence as SEQ ID NO: 10 in the sequence listing"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers 30..208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      226..326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "This region is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "This region is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ā,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       derived from C. cellulovorans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            derived
                                                                                                                                                                                                                                                                                           glue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mechanical property.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from bovine"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain; PBD; paper;
                                                                                                                                                                                                     s protein cellulovorans
                                                                                                                However
```

Query Match

36.5%;

Score

487;

DB

22;

Length

```
RESULT 7
AAED5747
ID AAED
XX AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC AAED
AC CBI
AC AAED
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AAED
AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC CBI
AC AC C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 46.8 Matches 116; Conservative
                                                                                                                                                                                                                                                                                                                                                                                       08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Clostridium cellulovorans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CBD; CBD cross linker protein; CCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium
  The present invention relates to methods and compositions linking and/or modifying the properties of polysaccharide
                                                                                                                                    Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                    (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE05747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAE05747 standard; Protein; 341 AA.
                                                                                                                                                                                                                              WPI; 2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200134091-A2
                                                                     Example 1.2; Fig 2b-2e; 121pp; English.
                                                                                                                                                                                                                                                                          Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188 GTA-PGPD 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cross linker protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTACPOPD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGNSYVDNTSKVTANFVKETASPTSTYDTYVE----
                                                                                                                                                                                                                                                                                                                    CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                          Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GRITKSDWSNYTQTNDYSFDASSSTPVVNP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cellulovorans CBD cross linker protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                     99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340..341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "This residue is absent
as SEQ ID NO: 6 in the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.88;
                                                                                                                                                                                                                                                                          ٩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Encoded by CCATAGGAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -FGFASGRATL------KKGQFITIQ-----
                                                                                                                                                                                                                                                                          Shoseyov 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 2.9e-39;
2; Mismatches 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----KVTGYIGGAK--VL 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        listing'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
for cross-
materials.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR63634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The method involves treating the polysaccharide structure with a polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide meterials such as paper, The polysaccharide. Such as paper, and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence is Clostridium cellulovorans cellulose binding domain (CBD) cross linker protein (CCP).

Note: This sequence is stated to be the same as that shown as SEQ ID NO: 6 in the sequence listing of the specification. However this sequence has an additional residue at its C-terminal.
    DO:
                                                                                                                                                           14-APR-1994;
                                                                                                                                                                                                       27-OCT-1994
                                                                                                                                                                                                                                                   WO9424158-A
                                                                                                                                                                                                                                                                                             Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                    Cellulose binding domain;
                                                                                                                                                                                                                                                                                                                                                                                Cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR63634;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR63634 standard; Protein; 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                            (REGC ) UNIV CALIFORNIA (YISS ) YISSUM RES & DEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 penetrate paper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154 GTA-PGPD 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 LGNSYYDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLYGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
    RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ROEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTACPQPD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYVE--
    Goldstein MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            341 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                           94WO-US04132
                                              & DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36.5%;
46.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -FGFASGRATL-----
  Shoseyov 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 487; DB 22;
Pred. No. 3.1e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą
  Shpiegl I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
```

-KVTGYIGGAK--VL

153

111

Length 341; Indels

90;

Gaps

7;

60 60

```
AAQ72917/R63634 is a novel isolated cellulose binding domain. It pref. binds crystalline with a Kd ranging from 1.5 microM. On 5.5 microM, compression with a Kd of <1.2 microM, esp. <1.0 microM. The protein and compression by the encoding DNA are claimed, as is a CBD fusion protein (FP) pref. Comprising the CBD and a second protein. The second protein is pref. Comprising the CBD and a second protein. The second protein of degrading C protein A, heparinase, a hormone or an enzyme capable of degrading C an environmental pollutant, or an HSP, HSP antibody, cross-reactive HSP-related protein or an antigenic portion of this. The CBD and FP C may be used in drug delivery, affinity sepns, and diagnostic may be used in drug delivery, affinity sepns, and diagnostic cources that produce CBDs that bind with high affinity and in a C sources that produce CBDs that bind with high affinity and in a C source of CBD encoding nucleic acid is C. cellulovorans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÕ
RRESULT 9
AARD575
ID AARD57
XX AARD57
AC AAAD
XX AAAD
XX POlly
KW Yarr
KW Clos
KW Clos
KW Clos
KW Clos
CX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
XX Clos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Isolated cellulose binding de applications. including drug diagnostic techniques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1994-341767/42.
N-PSDB; AAQ72917.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Fig 1; 125pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAE05745 standard; Protein; 163
                                                                                                                                                                                                                                                                                                                                                                  polysaccharide modification; polysaccharide binding domain; PBD; parn; fiber; textile; biological crosslinker; mechanical property; Clostridium cellulovorans cellulose binding domain; wet strength; durability; elasticity; CBDclos; cellulose binding protein A; CBP /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium cellulovorans cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAE05745;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-SEP-2001
                                                                                                                                                                                                                                                                                                   Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                            durability;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                              02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                          17-MAY-2001
                                                                                                                                                                                                                                                WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 51.7 es 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ROEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----GRITKSDWSNYTQTNDYSFD 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EKVKAGQVTR--WRNPDTGNSYSVE 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                      99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36.2%;
51.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -FGFASGRATL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domain and fusion proteins
ug delivery, affinity separa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 483; DB 15;
pred. No. 2.7e-39;
9; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oteins - with separations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -KKGQFITIQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CBDclos).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              It pref
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
```

```
The present invention relates to methods and compositions for cross-cc linking and/or modifylng the properties of polysaccharide materials. CC Inking and/or modifylng the properties of polysaccharide materials. CC polysaccharide binding domain (PBD) fusion protein The method is CC polysaccharide binding domain (PBD) fusion protein The method is CC mechanical properties of polysaccharide materials such as paper. CC warns, fibers and textiles, using biological crosslinking agents. CC yarns, fibers and textiles, using biological crosslinking agents. CC yarns, fibers and textiles, using biological crosslinking agents. CC properties such as wet strengths, durability and elasticity. The PBD CC properties such as wet strengths, durability and elasticity. The PBD CC improves the recyclability of paper products. The pBD reagent maintains composed the fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of the fine fibers in a slurry therefore resulting in better recovery of compositions the pBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                 RESULT 10
AAE05748
                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                         В
H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CBDT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 1.1; Page 111-112; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          penetrate paper.
The present seque
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          domain (CBDclos) of
                                                Polysaccharide modification; polysaccharide binding domain; PBD; yarn; fiber; textile; biological crosslinker; mechanical property wet strength; durability; elasticity; protein A-cellulose binding protA-CBD.
                                                                                                                                                                                                                                                AAE05748 standard; Protein; 428
                                                                                                                                                                                                                 AAE05748;
                                                                                                                                           Clostridium
                                                                                                                                                                          24-SEP-2001
               Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MSVEFYNSNKSAQTNSTTPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MSVEFYNSNKSAQTNSTTPITKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LGNSYVDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106;
                                                                                                                                                                                                                                                                                                                                                                              EKVKAGQVTR--WRNPDTGNSYSVE 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nussinovitch
                                                                                                                                                                                                                                                                                                                                           -GRITKSDWSNYTQTNDYSFD 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36.2%;
milarity 51.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence is Clostridium cellulovorans cellulose binding :los) of cellulose binding protein A (CBP A).
                                                                                                                                         cellulovorans protein A-cellulose binding domain
                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEV CO HEBREW UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                      -----FGFASGRATL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shoseyov 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 483; DB 22;
pred. No. 2.7e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22;
                                                                                                                                                                                                                                                                                                                                                                                                                              --KKGQFITIQ
                                                                               mechanical property;
A-cellulose binding domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                          paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
```

```
밁
                      ş
                                                       밁
                                                                               ş
                                                                                                                                                                       Query Match
                                                                                                                Matches
                                                                                                                                                                                                                                                                                             polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                binding domain (ProtA-CBD). This sequence contains a part of CBP A protein and a part of protein A derived from PRIT2T vector sequence Note: This sequence is stated to be the same as that shown as SEQ ID NO: 8 in the sequence listing of the specification. However this sequence has 2 additional residues at its C-terminal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-NOV-1999;
                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                       The present sequence is Clostridium cellulovorans Protein A-cellulose
                                                                                                                                                                                                                                                                                         penetrate paper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSIY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CBDT-)
                                                        270
 330
                          61
                                                     present invention relates to methods and compositions for cking and/or modifying the properties of polysaccharide mater method involves treating the polysaccharide structure with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-457121/49
DB; AAD11045.
              LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nussinovitch
                                                                                                                                                                       428
                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fig 3b-3g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000WO-IL00708
                                                                                                                                                                       À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0164140
99US-0166389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= Unknown
/note= "Encoded by
427..428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label- CBP_A_protein 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= Protein_A
/note= "This region is derived
265..426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID
                                                                                                                            36.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "These residues are absen ID NO: 8 in the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shoseyov
                                                                                                              9;
                                                                                                             Score 483; DB 2
Pred. No. 1e-38;
9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are absent in the sequence listing"
                                                                                                                                           22;
                                                                                                              14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from pRIT2T vector"
                                                                                                                                         Length 428;
                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        materials.
                                                                                                              76;
                                                                                                             Gaps
                                                       329
                                                                                  60
361
                                                                                                              4;
```

```
AAY39952
ID AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY3953
AC AAY395
AC GAUSS
AC GAUSS
AC TAIS
AC TAIS
AC TROIL
AC TROIL
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
AC TAIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-MAR-1998;
15-JUN-1998;
01-OCT-1998;
                                                                            bioluminescence-generating systems, assays, screening methods, diagnostic method and articles of manufacture. They can be expressed using e.g. bacterial, yeast, fungal, plant, insect or animal cells. The Renilla mulleri, Gaussia and Pleuromamma luciferase or Renilla or Ptilosarcus GIPs can be used in e.g. toys, cosmetics, fountains, personal care items, fairy dust, beverages, soft drinks, foods, textile products, bubble bath, ink or paper products. In particular, they can be used in e.g. squirt guns, pellet guns, finger paints, foot bags, greeting cards, slimy play material, clothing, bubble making toys, bath powders, cosmetics, body lotions, gels, body powders, body creams, toothpastes, mouthwashes, soaps, body paints, bubble bath, inks, wrapping paper, gelatins, icings, frostings, greeting cards, beer, wine, champagne, soft drinks, ice cubes, received fished plants. The nucleic acids can also be used to produce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (PROL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bioluminescence-generating system; toy; cosmetic; fairy dust; beverage; body paint; squirt gun; balloon; slimy play material; soap; toothpaste; fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaussia sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaussia luciferase fusion protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY39952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Renilla and Ptilosarcus green fluorescent protein (GFP) nucleic proteins. The luciferases and GFPs can be used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence represents a luciferase of the invention. The invention relates to Renilla mulleri, Gaussia and Pleuromamma luciferase and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Renilla and Ptilosarcus green
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated Renilla mulleri,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAZ27550.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-580443/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bryan BJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9949019-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY39952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 RQEVGAATGAVVGGVAGQLFGKGSGRVSMATGGAVLGGLTGSKTGQSMDQQDKTKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EKVKAGOVTR - - WRNPDTGNSYSVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROLUME
BRYAN B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -GRITKSDWSNYTQTNDYSFD
                                                            fish
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Szent-Gyorgyi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 222-223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0079624.
98US-0089367.
98US-0102939.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US06698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J.
                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                         plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGFASGRATL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaussia and Pleuromamma luciferase and fluorescent protein nucleic acids -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -KKGQFITIQ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      380
```

Query Match Best Local Similarity

36. 62

Score Pred.

480.5; DB 20; No. 1.6e-38;

Length 382;

Sequence

382

Ą

δÃ

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
AAW90077
ID AAW9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
Matches
                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cellulose binding domain; CBD; CbpA; fusion protein; diagnosis; HSP; immunoassay; heat-shock protein; cross reactive protein; detection; antigenic fragment; antibody; insulin-dependent diabetes mellitus; cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW90077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C. cellulovorans CbpA CBD protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW90077;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 NYTQTNDYSFDASSSTPVVNPKVTGY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US5856201-A.
                                                                                     This sequence represents a cellulose binding domain (CBD) derived from the CbpA protein of Clostridium cellulovorans. The sequence is used the construction of a fusion protein which can be used in diagnostic construction of a fusion protein which can be used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility (which indicate insulin-dependent diabetes mellitus) but to it. The CBD, has very high affinity for cellulose (including to it. The CBD) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M).
                                                                                                                                                                                                                                                                                                                                                                                                                            (REGC )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                           Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -
                                                                                                                                                                                                                                                   Claim 3;
                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NFSRQ-----EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGA-VLGGLIGS 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   107;
                                                                                                                                                                                                                                                                                                                                                                       1999-105130/09
                                                                                                                                                                                                                                                                                                                                                                                                                               ) YISSUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; Protein; 162
                                                                                                                                                                                                                                                                                   analyte
                                                                                                                                                                                                                                                                                                                                                         AAV74072
                                                                                                                                                                                                                                                                                                                                                                                                   Goldstein MA,
                        Similarity
                                                                                                                                                                                                                                                      Fig 1A-B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                  162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                           CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94US-0330394
                                                                                                                                                                                                                                                       63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                  DEV CO
                          35.7%;
                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
            Score 477; DB 20
Pred. No. 1e-38;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                        o
                                                                                                                                                                                                                                                                                                                                                                                                         Shpiegl I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IGGAKVLGTAPGS
                                              DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33;
                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                              Length 162;
                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                       0;
                          Gaps
                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
```

B QΥ

N

```
AAW90081
ID AAW
XX AAW
XX OAW
XX COAW

                                                                                                                             Query Match
Best Local S
                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cellulose binding domain; CBD; CbpA; fusion protein; diagnosis; HSP; immunoassay; heat-shock protein; cross reactive protein; detection; antigenic fragment; antibody; insulin-dependent diabetes mellitus; cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C. cellulovorans CBD-KpnI fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW90081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW90081 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-OCT-1994;
                                                                                                                                                                                                                                                                              This sequence represents a fusion protein (CBD-KpnI) composed of the Cbp protein cellulose binding domain (CBD) from Clostridium cellulovorans protein is used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross reactive proteins, antigenic freatments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD has very high affinity for cellulose (including crystalline forms) and chitin affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but has almost no cellulolytic or amorphogenic activities. The CBD binds over a wide pH range and is not amorphogenic activities. The CBD binds over a wide pH range and is not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-105130/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (REGC ) UNIV CALIFORNIA.
(YISS ) YISSUM RES & DEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ᅡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                             amorphogenic activities. The CBD binds over a amorphogenic activities by washing with water released from cellulose by washing with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
5; Column 55-56; 63pp; English.
                                                                                                          1 Similarity 97.0
89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       analyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Goldstein MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                 154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94US-0330394.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           & DEV
                                                                                                                                        35.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoseyov O,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                        Score 472;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shpiegl
                                                                                                                                                   3e-38;
                                                                                                                                                                            DB
                                                                                                                                                                            20;
                                                                                                                             0
                                                                                                                                                                            Length 154;
                                                                                                                                Indels
                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CbpA
                                                                                                                                           0
```

```
RESULT 14
AAW90080
ID AAW90
                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
            В
                                  Ş
                                                               밁
                                                                                      δ
                                                                                                                               Query Match
Best Local
                                                                                                                      Matches
                                                                                                                                                                                                         shock protein (HSP) fragment. This protein is used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD has very high affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but has almost no cellulolytic or amorphogenic activities. The CBD binds over
                                                                                                                                                                                                                                                                                          This sequence represents a fusion protein composed of the CbpA protein cellulose binding domain (CBD) from Clostridium cellulovorans and a heat shock protein (HSP) fragment. This protein is used in diagnostic
                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                    Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with to cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cellulose binding domain; CBD; CbpA; fusion protein; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C. cellulovorans CBD-HSP fusion protein.
                                                                                                                                                                                                 a wide pH
                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1999-105130/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-OCT-1994;
14-APR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunoassay; heat-shock protein; cross reactive protein; detection antigenic fragment; antibody; insulin-dependent diabetes mellitus; cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW90080;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW90080 standard;
                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (YISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (REGC
             61
                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                          N
                           GNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                            SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GNSYVDNTSKVTANFVKETASPTSTYDTYLD
            GNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                              SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                4; Column 51-52; 63pp; English.
                                                                                                                      89;
                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goldstein MA,
                                                                                                                                                                                               range and
                                                                                                                                                                        156
                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                        À,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RES & DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94US-0330394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                  is not released
                                                                                                                              35.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                   <u>ب</u>
                                                                                                                Score 472; DB 2
Pred. No. 3e-38;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ó
                                                                                                                                                                                                  from cellulose
             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shpiegl
                                                                                                                                            20;
                                                                                                                   0
                                                                                                                                          Length 156;
                                                                                                                   Indels
                                                                                                                                                                                                 by washing with water.
                                                                                                                   0
                                                                                                                Gaps
                                                                 60
                                                                                        61
                                                                                                                                                                                                                over
                                                                                                                   0,
Search completed: October Job time: 36.487 secs
```

```
RESULT 15
AAR95080
뭐
                   QY
                                            В
                                                                    Qy
                                                                                                                                               Matches
                                                                                                          Query Match
Best Local
                                                                                                                                                                                A modified cellulose binding domain (CBD) or fraction of it, linke to a hapten moiety via one or more Cys or Lys residues and complex comprising the biotinylated CBD and a biotin-binding molecule selected from modified or unmodified avidin or streptavidin or an anti-biotin antibody, can be used in affinity chromatography, cell separation, cell, protein and enzyme immobilisation, selective removal of biological materials, multienzyme reactors, signal immunoassays and drug (e.g. pesticide) delivery. The CBD molecule can be modified with the hapten without affecting its high affinit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CELLULOSE binding domain; CBD; hapten; moiety; biotin; avidin; streptavidin; affinity chromatography; cell separation, cell immobilisation; protein immobilisation; enzyme immobilisa multienzyme reactors; signal immunoassays; drug delivery; pest cellulose. Chitin
                                                                                                                                                                                                                                                                                                                                Modified cellulose-binding partic. biotin, to provide assays, reactors, delivery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clostridium thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR95080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR95080 standard; peptide; 167
                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                           Claim 12;
                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1996-239453/24.
                                                                                                                                                                                                                                                                                                                                                                                                          Bayer
                                                                                                                                                                                                                                                                                                                                                                                                                                   (YEDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TECR ) TECHNION RES & DEV FOUND LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9613524-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cellulose; chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                               (UYRA-)
                                                                                                         Local
83
                    61
                                                           9
                                                                                                                                                                       cellulose,
                                          KVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKUTLRYYYTVDGQKDQTFWCDHA-AI 67
                       LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ
IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                                                                                                                                                                                                -) UNIV RAMOT APPLIED RES
) YEDA RES & DEV CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                          EA,
                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                           Page 34-35;
                                                                                                                                                                                                                                                                                                                                                                                                         Lamed R,
                                                                                                                                               167
                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                               AA;
                                                                                                                                                                        or chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94IL-0111415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95WO-US13813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLIED RES &
                                                                                                         18.48; 51.58;
                                                                                                                                                                                                                                                                                                                                                                                                          Morag
                                                                                                                                                                                                                                                                                                           53pp; English.
                                                                                                                                                                                                                                                                                                                                  domain mols. - havan an affinity system etc.
                                                                                                                                                                                                                                                                                                                                                                                                          E
                                                                                             16;
                                                                                             Score 245; DB 1
Pred. No. 6e-16;
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                          Shoham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                              IND
                                                                                                                                                                                                                                                                                                                                                                                                                                               DEV LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid.
                                                                                                                                                                                                                                                                                                                                                                                                          ۲
                                                                                                                    DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                           Wilchek
                                                                                                                                                                                                                                                                                                                                                         having attached hapten,
                                                                                             30;
                                                                                                                                                                                                                                                                                                                                              for, e.g. sepns.,
                       101
                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                           X
                                                                                                                                                                                   its high affinity
                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immobilisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pesticide;
                                                                                                                                                                                                  molecule
                                                                                                                                                                                                                                                                       complexes
                                                                                             4.
                                                                                                                                                                                                                                    cell
                                                                                             Gaps
                                                                      60
```

27,

2002, 10:57:58

ω

THIS PAGE BLANK (USPTO)

1

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                   Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 on :
    10
11
12
13
14
16
                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB seq length: 0
DB seq length: 2000000000
  815
303.5
258.5
252.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
251.5
                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                     SPTREMBL_19:*

1: sp_archea:*

2: sp_bacteria:

3: sp_fung1:*

4: sp_human:*

5: sp_humani:*

7: sp_mhc:*

7: sp_mhc:*

8: sp_organelle

9: sp_phage:*

10: sp_phage:*

11: sp_rodent:*

12: sp_virus:*

13: sp_virus:*

13: sp_unclassi

15: sp_bacteria:

16: sp_bacteria:*

17: sp_archeap:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     October 27, 2002, 11:00:01; Search time 28.7392 Seconds (without alignments) 1540.986 Million cell updates/sec
                                                                                                                                                                                                Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-677-374-6
1335
1 MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 562222 seqs, 172994929 residues
  61.0
222.7
221.2
19.4
118.8
118.8
118.7
118.7
117.7
117.7
117.7
117.6
117.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                             sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                 sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                            sp_organelle:*
                                                                                                                                                                                                 Length DB
  162
148
159
137
144
137
144
1546
154
151
131
131
131
131
131
1483
   \alpha
 094998
094981
095252
095252
09680
031065
09844W8
045996
0951999
096909
096909
096909
096909
096909
096909
096909
096909
096909
096909
096909
096909
096909
096909
                                                                                                                                                                                                   ij
                                                                                                                                                                                                                                    SUMMARIES
09f9k8 pisciricket
054381 rickettsia
09f9f2 rickettsia
09f9f2 rickettsia
05252 rickettsia
09k2n6 male-killin
031065 rickettsia
09k4w8 male-killin
045996 clostridium
053154 rickettsia
09f9g9 rickettsia
09f9g7 rickettsia
09f0g1 rickettsia
09f0g1 rickettsia
09f0g2 rickettsia
052637 rickettsia
052637 rickettsia
052637 rickettsia
052637 rickettsia
052637 rickettsia
                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
```

110	111	111.5	111.5	113.5	114	114.5	120.5	121	121	122	127.5	128	135.5	137	138.5	139	142	142.5	144.5	•	149.5			•	•	169.5	9	195.5
8.2	8.3	8.4	•		8 . 5	•	•	9.1	9.1	9.1	9.6	9.6	10.1	10.3	10.4	10.4	10.6	10.7	10.8	11.1	11.2	11.2	11.3	11.3	•		14.5	14.6
155	155	2316	154	499	499	501	136	508	499	257	182	170	930	199	921	77	1711	1000	996	1751	1426	261	1770	1779	997	321	887	1915
Ν	N							N	N	16	16	N	N	16	ν	N	2	Ν	Ν	Ν	2	2	Ν	N	Ν	N	Ν	N
Q9RB08	Q9F6B1	Q9FDJ9	0914S1	Q45532	052731	083012	Q92R89	Q93LD0	Q93TJ6	Q9A8M8	Q9HXI3	Q9RFX6	Q9RFX5	Q985G4	Q9L8L8	Q9AGC7	P96311	024820	Q9AQH0	Q9AQG4	Q9X3P6	Q9AQG7	Q9X3P5	052374	Q9Z4I1	Q46392	Q9L3J8	Q9RPL0
Q9rb08 pectobacter	Q9f6b1 edwardsiell	П	Q9i4s1 pseudomonas	o		Б	Q92r89 rhizobium m	Q931d0 bacillus su	Q93tj6 bacillus su	Q9a8m8 caulobacter	Q9hxi3 pseudomonas	Q9rfx6 caldibacill	Ω	4	Q91818 caldibacill	7 rickettsi	۸.	O24820 thermophili	Q9agh0 caldicellul	Q9aqg4 caldicellul	Q9x3p6 caldicellul		Q9x3p5 caldicellul	74 caldicellu	Q9z4il bacillus sp	Q46392 clostridium	8 clos	Q9rpl0 acetivibrio

ALIGNMENTS

QY 157 GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKOER	Matches 158; Conservative 1; Mismatches 1; Indels 0; Gaps Qy 97 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL 156	atch 61.0%; cal_Similarity 98.8%;	DR EMBL; AF184152; AAG17000.1; SQ SEQUENCE 162 AA; 17661 MW; DDE99E6FD94A527E CRC64;	RL Submitted (SEP-1999) to the EMBL/GenBank/DDBJ			RD SECTENCE FROM N. A.			GN OSFA. OS Piscirickettsia salmonis.	01-MAR-2001 (TrEMBLrel. 16,	DT 01-MAR-2001 (TrEMBLIE) 16 Last segmence indate	Q9F9K8;	ID Q9F9K8 PRELIMINARY; PRT; 162 AA.	RESULT 1
SNSYSVEPVRTYQRYNKQER 216 	1; Indels 0; Gaps 0; 30LFGKGSGRVSMAIGGAVL 156	Length 162;	7E CRC64;	databases.	surface antigen in the	.			Piscirickettsia group;		odate)	10			

```
RESULT
054381
                                                                                                                                                                              RESULTING PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN PRESULT IN P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
В
                                         δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                           Matches
                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-NOV-1998 (TrEMBLrel. 08, Last annotation update)
17 KDA COMMON-ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          054381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                054381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia sp.
Bacteria; proteobacteria; alpha subdivision;
Bactetsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID-789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Curr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-98087556; PubMed-9425244; Davis M.J., Ying Z., Brunner B.R., Pan "Rickettsial relative associated with Curr. Microbiol. 36:80-94(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O9F9F2:
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
17 KDA GENUS-COMMON ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia felis (Rickettsia azadi).
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=42862;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9F9F2
                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE=21217364; PubMed=11321078;
MEDLINE=21217364; PubMed=11321078;
Bouyer D.H., Stenos J., Crocquet-Valdes P., Moron C.G., Popov V.L.,
Zavala-Velazquez J.E., Foil L.D., Stothard D.R., Azad A.F.,
                                                                                                                                                                                        spotted fever group.";
Int. J. Syst. Evol. Microbiol. 51:339-347(2001).
EMBL; AF195118; AA628452.1; ".
SEQUENCE 159 AA; 16497 MW; 34C5B020AF470A1F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132
                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                         "Rickettsia felis: molecular characterization of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                 103
                                                                                                                   Local
    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQ 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EIYGTACPOPDGRWQVI 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U76907; AAC02809.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KAYGTACROPDGOWOVV 148
                                            SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
  SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                             Similarity 37.
61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                      159 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22.7%;
40.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15050 MW;
                                                                                                                        21.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 303.5;
Pred. No. 2.
                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                  Score 283; DB pred. No. 1.1e 30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A7AFEEFDEOAEEE4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                           34C5B020AF470A1F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pantoja A., Ferwerda F.H.;
ith papaya bunchy top disea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .2e-17;
                                                                                                                                                   DB 2;
                                                                                                                               . 1e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -KNNTGQYCREYTQTVVVGGKQQ 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                   Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                            Indels
                                                                                                                                                                                                                                                                                               new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       disease.";
                                                                                                                                                                                                                                                                                               member
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                            16;
                                                                                                                                                                                                                                                                                                  of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
```

```
RESULT
052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΩY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                    RESULT
Q9K2N6
    QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δδ
                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Billings A.N., Teltow G.J., Walker D.H.;
"Molecular characterization of a novel spotted fever group
species from Ixodes scapularis in Texas.";
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; AF031534; AAB95267.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-1998 (TREMBLIEL 06
01-JUN-1998 (TREMBLIEL 06
01-DEC-2001 (TREMBLIEL 19
17 KDA ANTIGEN (FRACMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 052252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsia cooleyi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=69410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            213
SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,

Schulenburg H.J.G.V.D., Majerus M.E.N.;

Bertrand D., Hurst G.D.D., Majerus M.E.N.;

Bertrand D., Hurst G.D.D., Majerus M.E.N.;

Ton the evolution of male-killing: Monophyletic origin and horizontal monester of male-killing Rickettsia (a-Proteobacteria) from two contransfer of male-killing Rickettsia (a-Proteobacteria) from two congeneric ladybirds, Adalia bipunctata L. and A. decempunctata L.

(Coleoptera: Coccinellidae).";

(Coleoptera: Coccinellidae).";

Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.

BMBL; AJ269518; CAB96583.1; ".

EMBL; AJ269518; CAB965882.1; ".

NON_TER 144 144
                                                                                                                                                                                                                                                O9K2N6;
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
                                                                                                                                                                                             17KDA ANTIGEN (17 KDA ANTIGEN) (FRAGMENT).
male-killing Rickettsia from Adalia bipunctata.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiaae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                         Q9K2N6
                                                                                                                                                                                                                                                                                                                                                                                                       232
                                                                                                                                                                                                                                                                                                                                                                                                                                                              174
                                                                                                                                                                                NCBI_TaxID=38028;
                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                  66
                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAVLGGQTGAGMDEQDRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGLWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                           -- IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIA
                                                                                                                                                                                                                                                                                                                                                                             GKQQKAYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                                       GQKQEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                             AELTSQRALEAAPSGSSTEWRNPDNGNYGYVTPNKTY-----RNSTGQYCREYTQTVVIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 (TrEMBLrel. 06,
8 (TrEMBLrel. 06,
1 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                          246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 258.5;
Pred. No. 9.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No. 9.4e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                                                                                                  144 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159
                                                                                                                                                                                                                    Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212
                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
```

```
RESULT
Q9K4W8
ID Q9
AC Q9
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                     Ş
                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
Q9K4W8;
Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O31065

O31065; Q9WW02;
O1-JAN-1998 (TrEMBLrel. 05, Created)
O1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
O1-OCT-2001 (TrEMBLrel. 18, Last annotation update)
17 KDA ANTIGEN (17 KDA PROTEIN) (FRAGMENT).
Rickettsia honei.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiaee; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  spotted fever in Australia.";
Int. J. Syst. Bacteriol. 48:1399-1404(1998)
EMBL; AF027124; AAB81846.1; -.
EMBL: AF060706; AAD20231.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=99045882; PubMed=9828442;
Stenos J., Roux V., Walker D., Raoult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (SEP-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN-TT-118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stenos J., Roux V., Walker D., Raoult D.;
"Rickettsia honei sp. nov., the aetiological
spotted fever in Australia.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175
                                                                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
                                                                                                                                                                                                235
                                                                                                                                                                                                                                                                                                                                       120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                               QEIYGTACPQPD 246
                                                                                                                                                                                                                                                     KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
::|| :| || || || || || :| :| || :| :| || :|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QEIYGTACPOPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                             QKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                       NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QKAYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                   TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY - - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF060704; AAD20230.1; -.
                                                                                                                                                                                                                                                                                                                                                                             52;
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                  137 AA; 14167 MW;
(TrEMBLrel. 15, (TrEMBLrel. 15, (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>Α</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.9%;
                                                                                                                                                                                                                                                                                                                                                                                          18.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Teel P.D., Walker D.F
the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ¥.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24;
                                                                                                                                                                                                                                                                                                                                                                            24;
Last sequence update)
Last annotation update)
                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                               Score 251.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 252.5;
Pred. No. 3.1
                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                75BC1D0D745B428C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C8254739CCA56AE7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            No. 3
                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .1e-13
                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                              .5e-13;
                                                                                                                                                                                                                                                                                                                                                                                                               BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DΒ
                                                                                                                                                                                                                                   -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45;
                                                                                                                                                                                                                                                                                                                                                                            45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                           Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 144;
                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of Flinders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Island
                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                            4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
Q45996
   ALD DE REPRESENTATION DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                          [2]
SEQUENCE FROM N.A.
STRAIN=ATCC 35319;
MEDLINE=99173902; Po
                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN=ATCC 35319; MEDLINE=96218696; P Pages S., Belaich A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q45996;
01-NOV-1996
01-MAR-2001
01-JUN-2001
SCAFFOLDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium celluloly Bacteria; Firmicutes; Clostridium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20575219; PubMed=11133455;
Schulenburg H.J.G.V.D., Habig M., Sloggett J.J.,
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                male-killing Rickettsia from Adalia decempunctata
Bacteria; Proteobacteria; alpha subdivision; Rick
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                     "Sequence analysis of scaffolding protein CipC and ORFXp, a new cohesin-containing protein in Clostridium cellulolyticum: comparison of various cohesin domains and subcellular localization of ORFXp."; J. Bacteriol. 181:1801-1810(1999).
                                                                                                                                                                                                                                                                "Interaction between the endoglucanase CelA and the scaffoldi protein CipC of the Clostridium cellulolyticum cellulosome."; Bacteriol. 178:2279-2286(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q45996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Coccinellidae).";
Appl. Environ. Microbiol. 67:270-277(2001).
EMBL; AJZ69516; CAB96381.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bertrand D., Hurst G.D.D., Majerus M.E.N.;

"Incidence of male-killing Rickettsia spp. (alpha-Proteobacteria)

the Ten-Spot Ladybird Beetle Adalia decempunctata L. (Coleoptera:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiaceae; Ri
NCBI_TaxID=120393;
 Reverbel-Leroy Belaich J.;
                                   SEQUENCE FROM N.A. STRAIN-ATCC 35319;
                                                                                                                                                             Pages S., Bel
Belaich J.P.;
                                                                                                                                                                                                                                                                                                                      Belaich J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=1521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QKSYGNACRQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                             Belaich A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       cellulolyticum.
irmicutes; Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. 01, Created)
(TrEMBLrel. 16, Last sequence update)
(TrEMBLrel. 17, Last annotation update)
PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                  ς,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                          PubMed=10074072;
A., Fierobe H.P.,
                                                                                                                                                                                                                                                                                                                                     PubMed=8636029;
A., Tardif C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                    Tardif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14801 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.8%;
                  c.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 251.5; I
Pred. No. 3.7e
24; Mismatches
                  Belaich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C825472F16A56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                     Reverbel-Leroy
                                                                                                                                                                             Tardif C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1546
                  A:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.7e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                  Bernadac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                             Gaudin
                                                                                                                                                                                                                                                                                                                                     c.,
                                                                                                                                                                                                                                                                                                     the scaffolding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Webberley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
```

11;

Gaps

4;

75

M.K.,

ín

Α:

Gaudin

<u>ر</u>.

comparison

Gaudin C.,

```
RESULT OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SALES OF SA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 72
                δÃ
                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Molecular study and overexpression of the Clostridium cellulolyticum celCCF cellulase gene in Escherichia coli."; submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (OCT-2000) to tl
EMBL; U40345; AAC28899.2;
HSSP; Q06851; 1NBC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00942; CBD_3; 1.
Pfam; PF00942; CbDesin; 8.
ProDom; PD001947; CBD_3; 1.
PROSITE; PS00012; PHOSPHOPANTETHEINE; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pages S., Bel
Belaich J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001956; CBD_3
InterPro; IPR002102; Cohes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR003880; Phosphopant_attach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q53154 PRELIMINARY; PKT; 134 AA.
Q53154;
Q1-NOV-1996 (TrEMBLrel. 01, Created)
Q1-NOV-1996 (TrEMBLrel. 01, Last sequence update)
Q1-NOV-1998 (TrEMBLrel. 08, Last annotation update)
QCLONE PRB FISF 1), 5' END CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE=93084757; PubMed=1452660;
Baird R.W., Lloyd M., Stenos J.,
Barracterization and comparison
group rickettsiae.";
J. Clin. Microbiol. 30:2896-2902(
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174
                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93
                       103
                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LGNSYVDNTSKVTANFVKETASPTSTYDTYLD---PSHMRGCLQGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VSVQENNGSSPASSNSIYARFKVTNTSGSPINLADLKLRYYYTQDADKPLTFWCDHAGYM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRXYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFDQSNDWSYTAA------GSYNDWQKISAFVGGTLAYG--STPDGGNPPPQDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NESRQEVGAATGAVVGGVAGQLEGKGS----GRVSWAIGGAVLGGLIGSKIGQSMDQQDK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGSNYIDATSKYTGSF-KAYSPAYTNADHYLEVALNSDAGSLPAGGSIEIQTRFARNDWS 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IKLNQSLEKVKAG-----QVTRWRNPDTGNSYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                       in. Microbiol. 30:2896-
M99391; AAA73386.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
72; Conserv
                                                                   Similarity
55; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Belaich A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28
1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                           154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                   154
                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27 POTENTIAL.
1546 SCAFFOLDING PROTEIN.
A; 158748 MW; F8651504EC27809F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cohesin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to the EMBL/GenBank/DDBJ
                                                                                                                                                                                      154
                                                                                                                                                                                                                                 30:2896-2902(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Reverbel C.,
                                                                                                                                                                15849 MW;
                                                                     18.3%; Score 244; DB 2; 35.3%; Pred. No. 1.7e-12; tive 31; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 249;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                   F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                               Ross B.C., Stewart R.S., Dwyer B.; of Australian human spotted fever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tardif C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2; I
1.3e-11;
hes 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fierobe H.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsiales;
                                                                               54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1546;
                                                                                                                          Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaudin
                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92
                                                                                        6
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9F9Q9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID=35789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2001 (TremBirel. 16, Created 01-MAR-2001 (TremBirel. 16, Last at 01-MAR-2001 (TremBirel. 16, Last at 01-MAR-2001 (TremBirel. 16, Last at 01-MAR-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (AUG-1999) to the EMBL; AF181036; AAG09427.1; NON_TER 151 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia helvetica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Novel peptide diagnostic reagent and kit for detection rickettslosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213
                                                                                                                                                                          O9FOQ1 PRELIMINARY; PRT; 131 AA.
O9FOQ1;
O1-MAR-2001 (TrEMBLrel. 16, Created)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence up
O1-MAR-2001 (TrEMBLrel. 16, Last annotation
O1-MAR-2001 (TREMBLREL.).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                         Rickettsia sp. California 2.
Bacteria; Proteobacteria; alpl
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                      103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
 STRAIN=CALIFORNIA 2;
Roux V., Raoult D.;
Submitted (DEC-1999)
                                                                                                        SEQUENCE FROM N.A
                                                                                                                             NCBI_TaxID=147259;
                                                                                                                                                                                                                                                                                                                                                          157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             u
                                                                     Raoult D.;
"A new SFG rickettsia
                                                                                            STRAIN-CALIFORNIA
                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                              213
                                     SEQUENCE FROM
                                                            Submitted
                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GQD-----CRVYTQTVVIGGKQQKAYGNACRQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KQERROQYCREFQQKAMIAGQKQEIYGTACPQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                               SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKCKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                     SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                   GAVLGGQTVAGMDEQDRRLAELTSQRALEAAPSGSNVEWRNPDNGNYGYVTPNKTY
                                                                                                                                                                                                                                                                                                                                                      GGLIGSKIGOSMDOODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                       -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQP
                                                                                                                                                                                                                                                                                                  KQERRQQYCREFQQKAMIAGQKQEIYGTACPQP
                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151 AA;
                                                            (JAN-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                            17.9%;
ilarity 35.9%;
Conservative 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                         N.
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15621 MW;
                                                              to
       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16, Created)
16, Last sequence up
16, Last annotation
                                                                isolated from fleas.";
to the EMBL/GenBank/DDBJ
                                                                                                                                   á 2.
1; alpha subdivision; F
sieae; Rickettsia.
       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created
                                                                                                                                                                                                                                                                                                                                                                                                                               28;
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 239; DB
Pred. No. 4.2e-
28; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ
       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B77407B9C71E4B39 CRC64;
                                                                                                                                                                                                   sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                            fleas.";
                                                                                                                                                                                                                                        131
                                                                                                                                                                                                                                                                                              151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                             .2e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                        ÃΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                          update)
          databases.
                                                                  databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                           63
```

6;

```
RESULT
Q9L522
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
R1
                                                                                                                                                                                                                                                                                         RESULT
Q52637
                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                  Ş
                                                                                                                                                           밁
                                                                                                                                                                                                     뭉
                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFT
                                                                                                                   밁
                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF210693; AND TER 131
NON_TER 131
SEQUENCE 131 A
                                                                                                                                                                                                                                                                                                   NON_TER
Q9L522 PRELIMINARY; PRT; 131 AA.
Q9L522; PRELIMINARY; PRT; 131 AA.
Q9L522; PREMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
17 KDA SURFACE ANTIGEN (FRAGMENT).
Rickettsia peacockii.
                                                                                                                                                                                                                                                                                                                                             Werren J.H., Hurst G.D., Zhang W. Majerus M.E.;
Majerus M.E.;
"Rickettsial relative associated";";
                                                                                                                                                                                                                                                                                                                       beetle (Adalia bipunctata).";
J. Bacteriol. 176:388-394(1994).
EMBL; U04162; AAA19235.1; -.
                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-94117373; PubMed-8288533; MEDLINE-94117373; PubMed-8288533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1998 (TrEMBLrel. 08
17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124 QKAYGNAC 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175
                                                                                                                   124
                                                                                                                                                                                 175
                                                                                                                                                                                                                         120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69
                                                                                                                                                             69
                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                Local Similarity
mes 49; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QEIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ 123
                                                                                                                   QKAYGNAC
                                                                                                                                                            TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                       QEIYGTAC
                                                                                                                                                                                                      NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 Similarity
49; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 (TrEMBLrel. 01, 5 (TrEMBLrel. 01, 08,
                                                                                                                                                                                                                                                                                         131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                   131
                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAG48554.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsieae;
                                                                                                                                                                                                                                                                                         13344 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17.7%;
38.3%;
                                                                                                                                                                                                                                                         17.7%;
38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13374 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                               24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 236.5;
Pred. No. 5.
                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                   Score 236.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                        AlDCF71050DF52DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                       with
                                                                                                                                                                                                                                                          No. 5
                                                                                                                                                                                                                                                                                                                                                                           Breeuwer J.A., Stouthamer R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
                                                                                                                                                                                                                                                                                                                                                       male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .6e-
                                                                                                                                                                                                                                                         .6e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                      killing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44;
                                                                                                                                                                                                                                               44;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiales;
                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              174
                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89
                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
```

```
RESULT
082830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                       A CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SO BEAR RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED BY A RECEIVED
                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                              Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-21091941; PubMed=11157215; Simser J.A., Palmer A.T., Munderloh U.G., Kurtti T.J.; Simser J.A., Palmer A.T., Munderloh U.G., Kurtti T.J.; "Isolation of a spotted fever group rickettsia, Rickettsia in a Rocky Mountain wood tick, Dermacentor andersoni, cell Appl. Environ. Microbiol. 67:546-552(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kakiuchi M., Isui A., Suzuki K., Fujino T., Fujino E., Kimura T., Karita S., Sakka K., Ohmiya K.;
"Cloning and DNA sequencing of the genes encoding Clostridium josui scaffolding protein CipA and cellulase CelD and identification of their gene products as major components of the cellulosome.";
J. Bacteriol. 180:4303-4308(1998).
                                                                                                                                                                                                                                                            Pfam; PF00942; CBD_3; 1.
Pfam; PF00963; Cohesin; 6.
Prodom; PD001947; CBD_3; 1.
PROSITE; PS00012; PHOSPHODANTETHEINE; UNKNOWN_5.
SEQUENCE 1162 AA; 120229 MW; 95F02DDD27ADFBA2
                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AB004845; BAA32429.1;
HSSP; Q06851; 1NBC.
InterPro; IPR001956; CBD_3.
InterPro; IPR002102; Cohesin.
InterPro; IPR003880; Phosphop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clostridium josui.
Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1998
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          082830;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 082830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-DAE100R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CIPA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SCAFFOLDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=98361925; PubMed=9696784;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=1499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=47589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
\omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQTGAGMDEQDRRLAEL
                            MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QKAYGNAC
ISVQFNNGSSPTSSSSIYARFKVTNTSGSPINLADLKLRYYFTQDENKQMTFWCDHAGYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF260571; AAF69012.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
49; Conserv
                                                                                                                                 Similarity
66; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 (TrEMBLrel.
3 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13413 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.6%;
38.3%;
                                                                                                                                                             17.5%;
34.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Phosphopant_attach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08,
08,
17,
                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 235.5;
Pred. No. 6.7e
24; Mismatches
                                                                                                                          Score 233.5;
Pred. No. 1.6e
81; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            228C020550CAA9D0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1162
                                                                                                                              1.6e-10;
ches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.7e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                 Indels
                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                    1162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peacockii,
line.";
                                                                                                                                 23;
                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
   92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174
                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                 7;
```

```
RESULT 15
Q977Y4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC DE BRACE REPRESENTATION OF SERVICE REPRES
                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                      B
Search completed: October 27, 2002, 11:10:24 Job time : 30.7392 secs
                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Noelling J., Breton G., Omelchenko M.V., Makarova K.S., Zeng Q.,
Rolling J., Breton G., Omelchenko M.V., Hitti J., Wolf Y.I.,
Glbson R., Lee H.M., Dubois J., Qiu D., Hitti J., Wolf Y.I.,
Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,
Bennett G.N., Koonin E.V., Smith D.R.,
"Genome sequence and comparative analysis of the solvent-producing
To bacterium Clostridium acetobutylicum.";
U. Bacteriol. 183:4823-4838(2001).
EMBL, ABD07605; AAK78886.1; -.
InterPro; IPR001956; CBD_3.
R InterPro; IPR001956; CBD_3.
R InterPro; IPR002102; Cohesin.
R Pfam; PF00963; Cohesin; 5.
R Pfam; PF00963; Cohesin; 5.
R Prodom; PD001947; CBD_3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clostridium acetobutylicum.
Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridiaceae; Clostridium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2001 (TrembLrel. 18, Created)
01-OCT-2001 (TrembLrel. 18, Last sequence update)
01-DEC-2001 (TrembLrel. 19, Last annotation update)
PROBABLY CELLULOSOMAL SCAFFOLDING PROTEIN, SECRETED,
CELLULOSE-BINDING AND COHESIN DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-ATCC 824 / DSM 792 / VKM B-1787;
MEDLINE-21359325; PubMed-11466286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=1488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAC0910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118 NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete proteome: SEQUENCE 1483 AA; 154444 MW; A74808E396AA9807 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174 IKLNQSLEKVKAGQ 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152 NFDQSNDWSYTSA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 LGNSYVDNTSKVTANFVKETASPTSTYDDY--SHMRGCL-QGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                             134
                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37 VQIQFADTNTSTTMNTIAPKFKITNNTGAPLDLTTLKLRYYFTADGTQDENFWCDHAGML 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SGNNYMDVTSKVSGTF-NEVSPAVTNADHYLEVALSSDAGSLPAGGSIEIQTRFARNDWS 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -KISPTSISAKQGQ 210
                                                                                                                                                                                                                                                                                                                                                                                                             NGYNYQTITSNVVGTFV-AMDNATATADHYLEISFSNG-
                                                                                                                                                                                                                                                                                                                    RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                          EKVKAGQVTRWRNPDTGNSYS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cch 16.7%; Score 223.5; DB 16; Length 1483; 11 Similarity 28.4%; Pred. No. 1.5e-09; 57; Conservative 22; Mismatches 49: Indels 73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                          -WSNYDQSNDYS 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----GSYMDWQKIAAFVGGTLVYG--STPNGDDNPTQDP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1483 AA.
                                                                                                                                                                                                                                                                                    -DAGSSLEVQCRVAKND--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 73; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB DB
  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-677-374-6
1335
1 MSVEFYNSNKSAOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 11:00:36; Search (without 1019.028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105224 seqs, 38719550 residues
  SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000000000
                                                                                                                                                                                             1848
159
159
159
159
154
154
154
154
154
159
1853
879
986
918
1039
1039
  499
499
155
145
145
155
155
155
179
179
179
179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version (c) 1993 - 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapext 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
 CBPA_CLOCL
17KD_RICDR
17KD_RICYN
17KD_RICAU
17KD_RICAU
17KD_RICAU
17KD_RICAM
17KD_RICAM
17KD_RICAM
CIPA_CLOTM
GUNI_CLOTM
GUNI_CLOTM
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CLOSR
GUNI_CALSA
GUNI_CALSA
GUNI_CALSA
GUNI_BACSU
GUNI_BACSU
PCP_YEREN
YCEA_PAELA
GUNI_ERWCA
PCP_HAEIN
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
GUNI_ERWCA
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHIPN
CHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.1.3
Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                time 9.72712 Seconds alignments)
Million cell updates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ltd
                                                                                                       P50928 rickettsia
P50931 rickettsia
P50931 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50929 rickettsia
P50920 clostridium
Q06851 clostridium
Q06851 clostridium
P50900 clostridium
P50900 clostridium
P50900 rickettsia
P10474 cendogluca
P22533 caldocellum
P22534 caldocellum
P23549 bacillus su
P33449 yersinia en
P39718 paenibacillus su
P3349 salmonella
Q53549 salmonella
P10475
P22534
P22534
P22534
P10475
P10475
P29718
P29718
P29718
P29718
P29719
P55741
P10325
P10325
P10325
P29719
P29719
P29719
                                                                                                                                                                                                                                                                                                                                                                                                  P16624 rickettsia
Q52764 rickettsia
P05372 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                      P22882 rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                             P38058 clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell updates/sec
            erwinia car
paenibacill
escherichia
erwinia car
                                                                  escherichia
erwinia car
haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
CBPA_CLOCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P38058;
01-OCT-1994 (Rel. 3
01-OCT-1994 (Rel. 3
15-DEC-1998 (Rel. 3
Cellulose binding F
                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=92228810; PubMed=1565642;

Shoseyov O., Takagi M., Goldstein M.A., Doi R.H.;

"Primary sequence analysis of Clostridium cellulo binding protein A.";

Proc. Natl. Acad. Sci. U.S.A. 89:3483-3487(1992).

-i- FUNCTION: BINDS TO CELLULOSE FIBERS AND COORD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clostridium cellulovorans.
Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridiaceae; Clostridium.
NCBI_TaxID=1493;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CBPA_CLOCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CBPA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein A precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30, Created)30, Last sequence update)37, Last annotation update)
```

cellulovorans

cellulose

COORDINATES

CELLULASE

97.5 7.3 541 1 NU57_YEAST 95 7.1 1.885 1 YQBO_BACSU 90 6.7 526 1 KICJ_BOVIN 90 6.7 1161 1 DAN4_YEAST 90 6.7 1161 1 DAN4_YEAST 90 6.7 1332 1 XKDO_BACSU 88 6.6 378 1 SLG1_YEAST 88 6.6 1077 1 HLES_DROME 87.5 6.6 1061 1 OAR_MYXA 86.5 6.5 72 1 OSMB_SALTY 86.5 6.5 1396 1 VLTF_BENT 86.5 6.5 3770 1 ACVS_EMEN1 86 6.4 526 1 VP5_BTV11	7.3 541 1 7.1 1585 1 6.7 526 1 6.7 1161 1 6.6 7 1332 1 6.6 1077 1 6.6 1061 1 6.5 72 1 6.5 72 1 6.5 3770 1 6.4 526 1
541 1185 526 1161 1332 1332 1378 1077 1061 1061 72 1396 1396 13970 1526	541 1 NU57_YEAST P48837 1585 1 YQBO_BACSU P45931 526 1 KICJ_BOVIN P66394 1161 1 DAN4_YEAST P47179 1332 1 XKDO_BACSU P54837 1372 1 XKDO_BACSU P54837 1077 1 HLES_DROME P34857 1061 1 OAR_MYXXA P38370 72 1 OAR_MYXXA P38370 72 1 OSMB_SALTY P37723 1396 1 VLTF_BPT5 526 1 VPS_BTV11 P33476
	1 NU57_YEAST P48837 1 YQBO_BACSU P45931 1 K1CJ_BOVIN P65394 1 DAN4 YEAST P47179 1 XKDO_BACSU P54837 1 XKDO_BACSU P54837 1 HLES_DROME Q02308 1 OAR_MYXXA P387723 1 VATF_BPT5 P38770 1 ACVS_EMENI P27742 1 VP5_BTV11 P33476
1 NU57_YEAST 1 YGD_BACSU 1 YGLO_BACSU 1 K1CJ_BOVIN 1 DAN4_YEAST 1 XKDO_BACSU 1 SIGNO_BACSU 1 SIGNO_BACSU 1 SIGNO_BACSU 1 OAR_MYXXA 1 OAR_MYXXA 1 VLTF_BPT5 1 ACVS_EMENI 1 VP5_BTV11	P48837 P45931 P06394 P47179 P54867 P54867 Q02308 P37723 P17723 P1334076
NU57_YEAST YQBO_BACSU K1CL_BOVIN DAN4_YEAST XKDO_BACSU SLG1_YEAST HLES_DROME OAR_MYXXA OSMB_SALTY VLTF_BPT5 ACVS_EMENI VP5_BTV11	P48837 P45931 P06394 P47179 P54867 P54867 Q02308 P37723 P17723 P1334076

ALIGNMENTS

PRT;

1848 A

Qy	Db	Qу	Qu. Be: Ma	SQ	H.T.	T.	FT	KW	DR	DR	DR	DR	DR	DR	DR	DR	2	S	S	S	S	S	റ്റ	cc
61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120	33 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 92	1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRVYYTSDGTQGQTFWCDHAGAL 60	Query Match 36.5%; Score 487; DB 1; Length 1848; Best Local Similarity 46.8%; Pred. No. 6.4e-32; Matches 116; Conservative 12; Mismatches 30; Indels 90; Gaps 7;	SEQUENCE 1848 AA; 189152 MW; 85FA6CE6F771AF1A CRC64;	DOMAIN 29 189 CELLULOSE-BINDING (BY SIMILARITY).	29 1848		Cellulose degradation; Cell wall; Repeat; Signal; Glycoprotein.	ProDom; PD001947; CBD_3; 1.	Pfam; PF00963; Cohesin; 9.	Pfam; PF00942; CBD_3; 1.	InterPro; IPR002102; Cohesin.	InterPro; IPR001956; CBD_3.	HSSP; Q06851; 1NBC.	PIR; A44140; A44140.	EMBL; M73817; AAA23218.1;		or send an email to license@isb-sib.ch).	entities requires a license agreement (See http://www.isb-sib.ch/announce/	modified and this statement is not removed. Usage by and for commercial	use by non-profit institutions as long as its content is in no way	the European Bioinformatics Institute. There are no restrictions on its	between the Swiss Institute of Bioinformatics and the EMBL outstation -	This SWISS-PROT entry is copyright. It is produced through a collaboration

망

8 B δÃ

밁 QΥ

```
Page
```

```
RESULT 2
ITKD_R
ITMD_R

, Qy
                                                                                                   Query Match
Best Local
                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-AGG-1990 (Rel. 15, Created)
01-AGG-1991 (Rel. 19, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
17 kba surface antigen precursor.
0MP OR RP833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsia prowazekii.
Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN=MADRID E;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17KD_RICPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Andersson S.G.E., Zomorodipour A., Andersson J.O., Sicheritz-Ponten T., Alsmark U.C.M., Podowski R.M., Naeslund A.K., Eriksson A.-S., Winkler H.H., Kurland C.G.; "The genome sequence of Rickettsia prowazekii and the origin of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of a gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=89359171; PubMed=2768201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commer entities requires a license agreement (See http://www.isb-sib.ch/annou or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=99039499; pubMed=9823893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-MADRID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 396:133-140(1998).
-i- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M28482; AAA26378.1; ALT_SEQ.
EMBL; AJ235273; CAA15258.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                         Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                     PROSITE;
                     103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteriol. 171:5199-5201(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LGNSYVDNTSKVTANFVKETASPTSTYDTYVE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKVKAGQVTR--WRNPDTGNSYSVEFVRTYQRYNKQERRQQYCREFQQKAMIAGOKQEIY 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTA-PGPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                   D33971;
                                                                                 61;
                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                     PS00013;
                                                                                                                                                                                             20
20
159 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                      D3397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                           PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                   16672 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -FGFASGRATL----
                                                                                                                  21.6%;
                                                                                             32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                   17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
; A33D404B65EEB071 CRC64:
                                                                                                                                                                                                                                                                                                                OPROTEIN; 1.
Antigen; Signal; Complete proteome.
                                                                                                                        Score 288;
Pred. No. 7
                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159 AA
                                                                                                                     DB 1;
.2e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --KVTGYIGGAK--VL 185
                                                                                                                                                      Length 159
                                                                                                         Indels
                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           143
                                                                                                               Gaps
                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SOLE ELECTRON SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                       Вp
                                                                                                                                                                                                                                                                                           29
                                                                        AC AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ഗ
```

```
RESULT 4
                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1997
01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17KD_RICJA
052764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia japonica.
Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
RCBI_TaxID=35790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-95229950; PubMed-7714214; Furuya Y., Katayama T., Yoshida Y., Kaiho I.; "specific amplification of Rickettsia japonic." specimens by PCR.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 kDa surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                 Outer membrane; Lipoprotein; Antigen; Signal.

SIGNAL 1 19 BY SIMILARITY.

CHAIN 20 159 17 KDA SURFACE ANTIGEN.

LIPID 20 20 N-ACYL DIGLYCERIDE (PROBABLE).

SEQUENCE 159 AA; 16554 MW; CDDCE7CEBDCD6B41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Clin. Microbiol. 33:487-489(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; D16515; BAA03965.1; -
17KD_RICCN
P05372;
                                                                                                                                                                                                                                                     103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                      157
                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KQERROOYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGLIGSKIGOSMDQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          anchor (Probable).
                                                                                                                                                                                                                                   GGLIGSKIGQSMDQQDK----IKLNQSLEKYKAGQYTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                   GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel.
                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35, Last sequence up 35, Last annotation
                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROKAR_LIPOPROTEIN; 1.
                                                                                                                                                                                                                                                                                                                          21.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor.
                                                                                                                                                                                                                                                                                                                32;
                                                                                                                                                                                                                                                                                                                              Score 286; DB 1
pred. No. 1.1e-1
                           PRT;
                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       japonica
                             159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ą
                                                                                                                                                                                                                                                                                                                                                    DB 1;
                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA from clinical
                                                                                                                                                                                                                                                                                                                                                  Length 159
                                                                                                                  159
                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                            .6
```

ð,

```
01-NOV-1988
01-AUG-1990
01-MAR-2002
17 kDa surfa
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPECUES-R.ricketts11;
SPECIES-R.ricketts11;
MEDLINE-87222152; PubMed-3108232;
MEDLINE-87222152; PubMed-3108232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Samson D.,
Raoult D.;
                                                                                                                            EMBL;
PIR;
PIR;
                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is
                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-89008059; PubMed-3139629; Anderson B.E., Baumstark B.R., Bellini W.J.; "Expression of the gene encoding the 17-kilodalton antigen Rickettsia rickettsii: transcription and posttranslational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES-R. conoril; STRAIN-Malish 7;
MEDLINE-21442074; PubMed-1155789;
Ogata H., Audic S., Renesto-Audiffren P., Fo
Samson D., Roux V., Cossart P., Weissenbach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsia conorii, and
Rickettsia rickettsii.
Bacteria; Proteobacteria; alpi
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17 kDa surface antigen precursor. OMP OR RC1287.
                                     CHAIN
                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anderson B.E., Regnery R.L., Carlone G.M., Tzian
Fu Z.Y., Bellini W.J.;
"Sequence analysis of the 17-kilodalton-antigen
                                                                                                                                                                                                                                                                                                                                                          modification.";
J. Bacteriol. 170:4493-4500(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                       SPECIES-R.rickettsii;
MEDLINE-89008059; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Comparative gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPECIES=R.conorii, and R.rickettsii; MEDLINE=89359171; PubMed=2768201; Anderson B = m-1-1
                                                              Outer membrane;
SIGNAL 1
                                                                                       PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-30 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Anderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                         LL; M28479; AAA26379.1; -.
M28480; AAA26576.1; -.
LL; AE008675; AAL03825.1; -.
SL; M16486; AAA26381.1; -.
SL; J03371; -; NOT_ANNOTATED_C
S; A25972; A25972.
R; A31836; A31836.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteriol. 169:2385-2390(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriol. 171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                anchor (Probable).
                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Attached to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lsms of evolution in Rickettsia 293:2093-2098(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 09, Created)
(Rel. 15, Last sequence update)
(Rel. 41, Last annotation updat
  59
              20
20
146
153
                                                                                                  A33971.
B33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence
  Α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tzianabos
                                                                          Lipoprotein;
                                                                        PROKAR_LIPOPROTEIN; ipoprotein; Antigen;
                         19
159
20
146
  16581
                                                                                                                                                                                                                                                                                                                                                                                                                                              N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alpha subdivision; Rickettsiales;
eae; Rickettsia.
  X.
         17 KDA SURFACE ANTIGEN
N-ACYL DIGLYCERIDE (PRO
N -> D (IN REF. 3).
G -> E (IN REF. 3).
  206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                          1.
Signal; Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fournier P.-E.,
ch J., Claverie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tzianabos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                   (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from
                                                                                                                                                                                                                                                                              restricti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prowazekii.";
                                                                          proteome
                                                                                                                                                                                                                                                                                                                                            by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McDade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barbe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia
                                                                                                                                                                                                                                                                                             a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antigen
                                                                                                                                                                                                                                                                              outstation -
tions on its
                                                                                                                                                                                                                                                                   ions
in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J.E.,
```

```
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                             뫄
В
                 20
                                            В
                                                                  δÃ
                                                                                              밁
                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
                                                                                                                                            Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-1991
01-AUG-1991
01-OCT-1996
17 kDa surfa
                                                                                                                                                                                                       CHAIN
LIPID
                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                         gene.";
J. Bacteriol. 171:5199-5201(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; Rickettsiaceae; Rickettsia (ROBL_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OMP
                                                                                                                                                                                                                              Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-89359171; Anderson B.E., Tzi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P22882;
                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                  EMBL; M28481;
PIR; C33971; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Comparative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia typhi
                                                                                           .7KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
 141
                        235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Çī
                                                                                                                                                                                                                                                                                                                                                                                                    anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: Attached to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
              QEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                               TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY - - -
                                                                    KLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         surface antigen precursor
                                                                                                                                             Similarity 55; Conserv
                                                                                                                                                                                                                                                    8481; AAA26377.1; -
971; C33971.
PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                            159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 19, Created)
(Rel. 19, Last sequence up
(Rel. 34, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
                                                                                                                                                                                                          20
20
                                                                                                                                                                                            AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tzianabos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=2768201;
ianabos T.;
                                                                                                                                                                                                       159
20
                                                                                                                                                                                            16549
                                                                                                                                                       20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    analysis of
                        253
                                                                                                                                                                                        17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBA
MW; 08973E2648FD8CD8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alpha subdivision;
eae; Rickettsia.
                                                                                                                                              27;
                                                                                                                                                       Score 276.5; DB 1
Pred. No. 6.3e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 1.30
1; Mismatches
                                                                                                                                                                                                                                          OPROTEIN; 1.
Antigen; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 285; DB 1; Pred. No. 1.3e-16;
                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                 outer membrane
                                                                                                                                                                  DB 1;
                                                --RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 53;
                                                                                                                                              46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                       (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     rickettsial
                                                                                                                                                                  Length
                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                 ש
                                                                                                                                                                                                                                                                                                                                                                                                                                                   antigen
                                                                                                                                                                                                                                                                                                                             in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212
                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6,
                                                                                                                                              4.
```

```
RESULT 6
RAC OCC OCC PT DAC
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                            γ
                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                            g.
                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                           RESULT /
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kba surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its up non-profit institutions as long as its content is in no way use by non-profit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Baird R.W., ROSS B., Dwyer B.;
Submitted (OCT-1991) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia australis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P50928;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7KD_RICAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                 17KD_RICPA Signated)
17KD_RICPA Signated)
17-1996 (Rel. 34, Created)
17-1996 (Rel. 34, Last sequence update)
17-CCT-1996 (Rel. 34, Last annotation update)
17-CCT-1996 (Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NON_TER
                                                                    Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                            Rickettsia parkeri.
                                                                                                                                                                                                                                                                                                                   157
         STRAIN-MACULATUM: Pretzman C.I., St
                                                       NCBI_TaxID=35792;
                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                            տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  anchor (Probable).
                                                                                                                                                                                                                                                                                                                                         GAVLGGQIGAGNDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYYTPNKTYRNSN
                                                                                                                                                                                                                                                                                                       GGLIGSKIGOSMDQQDK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                          SSLIIISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TE; PS00013; PROKAR LIPOPROTEIN; 1.
                                                                                                                                                                                                                                            KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                             59;
                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                            154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1
20
20
154
                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lipoprotein; Antigen; Signal.

19 BY SIMILARITY.
BY SIMILARITY.
17 KDA SURFACE ANTIGEN.
>154 17 KDA SURFACE (PROBABLE).
             Stothard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    >154
                                                                                                                                                                                                                                                                                                                                                                                                                                               15967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                          20.1%; Score 268; 37.8%; Pred. No.
               D.R.,
                                                                                                                                                                                                                                                                                                                                                                                                 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                             E3AA833346FAC320 CRC64;
               Ralph D.,
                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA
                                                                                                                                                                                                                                                                                                                                                                                                              3e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                  Clark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                   52;
                                                                                          Rickettsiales;
                   J.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                        Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                     Fuerst P.A.;
                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lipid
                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                               156
                                                                                                                                                                                                                                                                                                                                                                                                        6
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TRUE SOOR OF THE TR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases. i- SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17KD_RICRH
P50931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stothard D.R., Ralph D.A., Clark J.B., Submitted (AUG-1994) to the EMBL/GenBE -i- SUBCELLULAR LOCATION: Attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsia rhipicephali
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=33992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a c
between the Swiss Institute of Bioinformatics and the EMBL
LIPID
NON_TER
                                                                                                                                   Outer membrane;
                                                                                                                                                               EMBL; U11020; AAB07706.1; -
PROSITE; PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                   CHAIN
                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKIMVIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL•VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U17008; AAA82040.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  - RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -1996 (Rel. 34, Created)
-1996 (Rel. 34, Last sequence update)
-1996 (Rel. 34, Last annotation update)
surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR_LIPOPROTEIN; 1.

PROKAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   >154
20
154
154
15897 N
Lipoprotein; 19 19 154 20 154 154 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clark J.B., Fuerst P.A., Pretzman C.;
e EMBL/GenBank/DDBJ databases.
Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 259; DB 1;
pred. No. 1.7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5D06F45F9DBD5EEC
                                          Antigen; Signal.
Antigen; Signal.
BY SIMILARITY.
17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
```

```
RESOLUTION ACCORDANCE STATE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCORDANCE OF THE COLUMN ACCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŝ
                              В
                                                                     Ş
                                                                                                                                      밁
                                                                                                                                                                                δ
                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                               LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RICMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P50929;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia montana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U11017; AAB07705.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=33991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17KD_RICMO
                                                                                                                                                                                                                                                                                                     103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157
                                                                                                                                                                                           157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ū
                                                                                                                                                                                                                                                ر.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                   SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                 KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                         GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                     GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                              - RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   surface antigen precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mbrane; Lipoprotein; 1.
mbrane; Lipoprotein; Antigen; Signal.
1 19 BY SIMILARITY.
20 >154 17 KDA SURFACE ANTIGEN.
20 0.0 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                             20 >
20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15881 MW;
                                                                                                                                                                                                                                                                                                                                                                                 19.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19.4%; Score 259; 36.5%; Pred. No. :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 1.76
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                 Score 256; DB 1;
Pred. No. 2.9e-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A09C53B8769E31DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OCF85AD5D96DFEFB CRC64;
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             259; DB 1;
No. 1.7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 154;
                                                                                                                                                                                                                                                                               <u>=</u>
                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         by a lipid
                                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ဂ
: :
                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6,
                                                                                                                                                                                                                                                                                                                                                           6,
RESULT 11
CIPB.C OT 1866
AC Q01866
DT 01-0CT
DT 01-0CT
DT 16-0CT
DT 16-0CT
DT 16-0CT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
COLULT
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
17KD_RICAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         u
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1996
01-OCT-1996
01-OCT-1996
17 kDa surfac
                                                                                                                                                                                                        Q01866;
01-OCT-1994
01-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entitles requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stothard D.R., Ralph D.A., Clark J.B., Fuerst P. Submitted (JAN-1995) to the EMBL/GenBank/DDBJ de-i-SUBCELLULAR LOCATION: Attached to the outer
                                                                                      Clostridium thermocer
Bacteria; Firmicutes;
                                                                                                                                                                   01-0CT-1994 (Rel. 30, Created)
01-0CT-1994 (Rel. 30, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Cellulosomal scaffolding protein B (Cellulosomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal.
SIGNAL 1 19 BY SIMILARITY.
CHAIN 20 >154 17 KDA SURFACE ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI the European Bioinformatics Institute. There are no restrict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-MO 85-1084;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=33989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P50927;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17KD_RICAM
SEQUENCE FROM STRAIN=YS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U11013; AAB07704.1; -.
                                                                          Bacteria; F
Clostridium
                                                                                                                                                                                                                                                                   CIPB_CLOTM
                                                       NCBI_TaxID=1515;
                                                                                                                                                     (Cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-CAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                         GAVLGGQVGAGMDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SKIMIIALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                 KOERROOYCREFOOKAMIAGOKOEIYGTACPOPDGR
                                                                                                                                                                                                                                                                                                                                                                -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity
57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amblyommii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
154
154 AA;
                                                                                                                                                   integrating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                  thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               >154 17 KDA SURFACE ANTIGEN.
20 N-ACYL DIGLYCERIDE (PROBA)
154
157 MW; E4FBE4C29D943581 CRC64;

    Last sequence update)
    Last annotation update)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19.1%;
36.5%;
                                                                                            Bacillus/Clostridium group;
                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 255; DB 1; Pred. No. 3.5e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                   В)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                   (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ä
                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              membrane by
                                                                                                                                                                       glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                              Clostridiaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pretzman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ი
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
```

```
CIPA_CLOTM
ID CIPA_C
AC Q06851
DT 01-JUN
DT 01-MAF
DE Cellul
DE 91ycor
GN CIPA.
OS Clost
                                                                                                                                                                                                                                           S
V
                                                                                                                                                                        밁
                                                                                                                                                                                            Š
                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Poole D.M.,
Gilbert H.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Identification subunit S1 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=93146373; poole D.M., Morag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEMS Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam: PF00363; Cohesin: 3.
Pfam: PF00404; Dockerin: 1: 2.
Probom: PD001947; CBD_3; 1.
PROSITE: PS00018; EF-HAND; UNKNOWN_1.
PROSITE: PS00448; CLOS_CELLULOSOME_RPT;
PROSITE: PS00448; CLOS_CELLULOSOME_RPT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
Pfam; PFO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                             Q06851;
01-JUN-1994
01-NOV-1997
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP;
                                                                                                                                                                                                                                                                                                                                REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cellulose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
               Clostridium
                                    glycoprotein
                                                  Cellulosomal
                                                                                                               CIPA_CLOTM
                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hentification of the cellulose-binding domain of the cellulosome punit S1 from Clostridium thermocellum YS.";

IS Microbiol. Lett. 78:181-186(1992).

IS Microbiol. Acts As A SCAFFOLDING PROTEIN IN THE CELLULOSOME. IT FUNCTION: ACTS AS A SCAFFOLDING PROTEIN IN THE CELLULOSOME. IT PROMOTES BINDING OF CELLULOSE TO THE CATALYTIC DOMAINS OF THE CELLULOLYTIC ENZYMES PROBABLY THROUGH THE BINDING OF THE NINE REPEATED DOMAINS WITH THE DUPLICATED SEGMENT OF 24 AMINO ACIDS PRESENT IN CATALYTIC SUBUNITS OF THE CELLULOSOME.
                                                                                                                                                                                                                        281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: CELL SURFACE. SIMILARITY: A 24 RESIDUES DOMAIN IS REPEATED TWICE IN THIS ENZYME.
                                                                                                                                                                                                61
                                                                                                                                                                                                                                           1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                       Pro; IPR002102; Cohesin.
Pro; IPR002105; Dockerin_1.
Pro; IPR002048; EF-hand.
Pr00942; CBD_3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q06851;
                                                                                                                                                                                              LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X68233; CAA48312.1; -.
                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                degradation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IPR001956; CBD_3
                                                                                                                                                                                                                                                                                                                                            11

<1

<1

94

462

81

241

273

273

440

710

710
                                                                                                                                                                                                                                                                                                                      772
                                     (Rel. 29, Created)
(Rel. 35, Last sequence update)
(Rel. 41, Last annotation update)
(Rel. 41, Last annotation update)
1 scaffolding protein A precursor (Cellulosomal
n s1/SL) (Cellulose integrating protein A) (Coh
                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1NBC
                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=1490597;
E., Lamed R., B
                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                1007
607
240
607
93
272
439
461
766
                                                                                                                                                                                                                                                                                                                          82491
                                                                                                                                                                                                                                                                                    18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cell wall;
                                                                                                                                                                                                                                                                                                                          ¥.
                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                 PRO/THR-RICH.
2 x 24 AA APP
2-1.
                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                  PRO/THR-RICH.
PRO/THR-RICH.
CELLULOSE-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                               \mu \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bayer E.A., Hazlewood G.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         X 147 AA APPROXIMATE REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                             (PARTIAL).
                                                                                                                                                                                                                                                                                                                          BBF06DE5E094FE10 CRC64;
                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                             24 AA APPROXIMATE REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Glycoprotein; Repeat.
                                                                                                                                                                                                                                                                                    245;
No. 1.
                                                                                                                    1853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                       DB 1;
.5e-12;
                                                                                                                    A
                                                                                                                                                                                                                                                                               30;
                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       restrictions
                                              (Cohesin).
                                                                                                                                                                                                                                                                                                        772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a collaboration
                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                way
```

InterPro; InterPro;

InterPro;

IPR002102; IPR002105; IPR001956; CBD_3 08-JUL-98. 26-SEP-97.

Cohesin.
Dockerin_1. EF-hand

PDB; 1NBC; InterPro;

lAOH; 1ANU;

```
PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Sequencing of a Clostridium thermocellum gene (cipA) encodin cellulosomal SL-protein reveals an unusual degree of internal homology.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; F:
Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Organization of a Clostridium thermocellum gene cluster encoding the cellulosomal scaffolding protein CipA and a protein possibly involved in attachment of the cellulosome to the cell surface.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=1515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1820-1853 FROM N.A. MEDLINE=93209931; PubMed=8458832;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gerngross U.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=93302508; PubMed=8316083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mol. Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Crystal structure of a bacterial family-III cellulose-binding domain: a general mechanism for attachment to cellulose."; EMBO J. 15:5739-5751(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS) OF MEDLINE-97076134; Pubmed-8918451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shimon L.J.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CKYSTALLOGRAPHY (2.15 ANGSTROMS) OF 184-321.
MEDLINE-97238934; PubMed-9083107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 structure provides new ins
Structure 5:381-390(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Frolow F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=98022914; PubMed=9402065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tormo J., Lamed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "A cohesin domain from Clostridium thermocellum:
structure provides new insights into cellulosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tavares G.A., Beguin P., Alzari P.M.; "The crystal structure of a type I cohesin domain at 1.7-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       resolution.";
                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ÷
                                                                                                                                                                                                                                                                                                                                                or send an
                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                           entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteriol. 175:1891-1899(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOI. Biol. 273:701-713(1997).
FUNCTION: ACTS AS A SCAFFOLDING
PROMOTES BINDING OF CELLULOSE TO
CELLULOLYTIC ENZYMES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: CELL SURFACE.

DOMAIN: CONTAINS 9 COPIES OF A DOMAIN (COHESIN)
DOMAIN: CONTAINS 9 COPIES OF A DOMAIN DOMAIN BORN
RESIDUES THAT BINDS TO THE DOCKERIN DOMAIN BORN
COMPONENTS OF THE CELLULOSOME.
COMPONENTS OF THE CELLULOSOME.
DOMAIN: A 24 RESIDUES DOMAIN IS REPEATED TWICE I
DOMAIN: A 24 RESIDUES DOMAIN IS REPEATED TWICE I
DOMAIN: A 24 RESIDUES DOMAIN IS REPEATED TWICE I
DOMAIN: A 24 RESIDUES DOMAIN IS REPEATED TWICE INDIVIDENT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through a ween the Swiss Institute of Bioinformatics and the EMBI European Bioinformatics Institute. There are no restric
                                                                                                                                                                                                                        ; L08665; -; NO:
; X67506; CAA471
S36859; S36859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION AS THE BINDING LIGAND FOR THE SL COMPONENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Firmicutes; Bacillus/Clostridium group; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27405;
                                                                                                                                                                                                                                                                                                                                                equires a license agreement (email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bayer E.A.,
                                                                                                                                                                                                                                                                CAA47840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Romaniec
                                                                                                                                                                                                                                                                                       -; NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8:325-334(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chirino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Aubert J.-P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    м.Р.м.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Morag E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kobayashi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Morag E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hermocellum: the crystal cellulosome assembly.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lamed R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF.
                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      368-522
                                                                                                                                                                                                                                                                                                                                                                                                                                                           There are no rest
ng as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND 42-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1213-1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Τ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bayer E.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Huskisson N.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yaron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENZYMES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN THIS ENZYME AS ZYMES. THIS DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CELLULOSOME. IT DOMAINS OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OF ABOUT 150
BY THE CATALYTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoham
                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                       ons on its
in no way
commercial
```

```
밁
                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                  002934;
002934;
001-FEB-1995 (Rel. 31, Last so
01-FEB-1995 (Rel. 31, Last so
P 01-NOV-1995 (Rel. 32, Last a
Endoglucanase I precursor (F
                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 53
                   GUNI_
                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                     REPEAT
REPEAT
REPEAT
DOMAIN
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00942; CBD_3; 1.
Pfam; PF00963; Cchesin; 9.
Pfam; PF00404; Dockerin_1; 2.
ProDom; PD001947; CBD_3; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00448; CLOS_CELLULOSOME_RPT; 2.
Cellulose degradation; Cell wall; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
REPEAT
 This
                                                                                              SEQUENCE FROM N.A., AND SEQUENCE STRAIN-NCIB 10682; MEDLINE-93171873; PubMed-8436949; Hazlewood G.P., Davidson K., Laur
                                                                           "Gene sequence and properties of Clostridium thermocellum.";
                                                                                          Gilbert H.J.;
                                                                                                                                  NCBI_TaxID=1515;
                                                                                                                                          Clostridium
                                                                                                                                               Clostridium thermocellum.
Bacteria; Firmicutes; Bacillus/Clostridium
                                                                                                                                                                                                                     CLOTM
                                                                                                                                                                                                                                                                                                                                                REPEAT
                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3D-structure.
                                                                                                                                                                                                                                                 428
                                                                                                                                                                                                                                                                            369
                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                         _
              HYDROLASES).
                                                                                                                                                                                                                                                                                  MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                       LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 427
 SWISS-PROT entry
                                                                                                                                                                                                             CLOTM
                                                                                                                                                                                                                                                                                                       . Similarity
53; Conserv
                                                                                                                                                                                                                                                                                                                                  889
1054
1219
1384
1548
1791
1791
1791
1824
1615
                                                                                                                                                                                                                                                                                                                                                                                                      1
29
364
54
29
183
560
                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                      1853
1853
1694
1694
1322
322
704
1031
1196
11361
11526
11690
11846
                                                                                                                                                                                                                                                                                                                                         1847
1615
                                                                                                                                                                                                                                                                                                            18.4%;
                                                                                                                                                                                                                                                                                                                                  196831
                                                                                                                                                                         Last sequence update)
Last annotation update)
rsor (EC 3.2.1.4) (EGI)
                                                                                                                                                                                               Created)
 S
copyright.
                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                  MW.
                                                                                                Laurie
                                                                                                                                                                                                                                                                                                            Score 245; DB 1
Pred. No. 4.1e-1
                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                          ċ
                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                  CelI,
                                                                                                                     QF
                                                                                                                                                                                                                                                                                                                                  > AA (IN REF. 1).
3ABDDC03ABFC5372
                                                                                               J.I.,
 Ιŧ
                                                                                                                     56
                                                                                                                                                                                                             879
                                                                                   Ø
 is
                                                                                  family
                                                                                                                                                                                                             3
 produced
                                                                                                 Huskisson
                                                                                                                                               group;
                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                          (Endo-1, 4-beta-glucanase)
                                                                                  F
                                                                                                                                                                                                                                                                                                                  Length 1853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Repeat;
                                                                                                                                                                                                                                                 469
                                                                                                                                                Clostridiaceae;
                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                  endoglucanase
 through a collaboration
                                                                                                 N.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Signal;
                     OF GLYCOSYI
                                                                                                                                                                                                                                                                                                                                                                                                                                  REPEATS
                                                                                                                                                                                                                                                                                                       4
                                                              4-BETA-
                                                                                                                                                                                                                                                                                                                                                                                                                                              ?
                                                                                                                                                                                                                                                                                                     Gaps
                                                                                   from
                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                       Ψ
```

```
RESULT 14
GUNZ_CLOSR
                                                                                                                                                                                                                                                                                                              дb
                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQ SETTING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
ACT_SITE
ACT_SITE
ACT_SITE
SEQUENCE
                            SEQUENCE FROM N.A., AND SEQUENCE OF 26-36 STRAIN-NCIB 11745; MEDLINE-91066838; PubMed=2250652; Jauris S., Ruecknagel K.P., Schwarz W.H., Bronnenmeier K., Staudenbauer W.L.; "Sequence analysis of the Clostridium ster a thermoactive cellulase (Avicelase I): ic
                                                                                                                                                                              01-NOV-1991 (Rel. 20, Created)
01-NOV-1991 (Rel. 20, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
Endoglucanase Z precursor (EC 3.2.1.4) (Endo-
(Thermoactive cellulase) (Avicelase I).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this statement is not removentities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between
the Euro
                                                                                                                                                Clostridium stercorarium Bacteria; Firmicutes; Bac
                                                                                                                                                                                                                               P23659;
01~NOV-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prosite; pso0592; GLYCOSYL_HYDROL_F9_1; 1.
prosite; ps00698; GLYCOSYL_HYDROL_F9_2; 1.
Cellulose degradation; Hydrolase; Glycosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro: IPR001701; Glyco_hydro pfam; pr00942; CBD_3; 2. Pfam; pr00759; Glyco_hydro_9; 1. ProDom; PD001947; CBD_3; 1.
          and cellulose-binding domains.";
Mol. Gen. Genet. 223:258-267(1990)
                                                                                                                                    Bacteria; F
Clostridium
                                                                                                                                                                                                                                                     GUNZ_CLOSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR; A47704;
                                                                                                                         NCBI_TaxID=1510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001956;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P26221;
                                                                                                                                                                                                                                                                                                                849
                                                                                                                                                                                                                                                                                                                                                            822
                                                                                                                                                                                                                                                                                                                                                                                                          800
                                                                                                                                                                                                                                                                                                                                                                                   123
                                                                                                                                                                                                                                                                                                                                                                                                                                                      742
                                                                                                                                                                                                                                                                                                                                     183
                                                                                                                                                                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     LQYANGNAGATSNSINPREKIINNGTKAINLSDVKIRYYYTKEGGASQNEWCDWSSA--G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALLG
                                                                                                                                                                                                                                                                                                                                   VKAGQVTRWRNPDTGNSYSVEPVRTYQR
                                                                                                                                                                                                                                                                                                                                                            EVG
                                                                                                                                                                                                                                                                                                                                                                                EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEK
                                                                                                                                                                                                                                                                                                                                                                                                          N-----
                                                                                                                                                                                                                                                                                                                                                                                                                              NSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFSRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L04735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and this statement is not removed requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             495
879
                                                                                                                                                                                                                                                                                                                                                                                                        SNVTGNFF-NLSSPKEGADT-----CL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A47704.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56
879
6 518
879
1 448
448
495
495
97796 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                              WSNYNQSNDYSFKQACLRQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA20892.1;
 ACTIVITY:
                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Glyco_hydro_9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CBD_3.
                                                                                                                                                  Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                            FGSGAG - - TLDPGGSV
Endohydrolysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENDOGLUCANASE I.
CATALYTIC.
CCLULOSE-BINDING (
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 188.5;
Pred. No. 7.3e
20; Mismatches
                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35A60069A514A927
                                                                                                                                                                                                                                                                                                              868
                                                                                                                                                                                                                                                                                                                                     210
                                m stercorarium cel
I): identification
                                                                                                                                                                                                                                                      986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                             (Endo-1,4-beta-glucanase)
of 1,4-beta-D-glucosidic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .3e-08;
                                                                                                                                                                                                                                                     Ä
                                                                                                    AND
                                                                   Kratzsch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
                                                                                                    475-486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                  Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                            celz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY).
                                                                   ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                  z gene
of cat
                                                                                                                                                                                                                                                                                                                                                            -EVQIRESKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                 encoding catalytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                      799
                                                                                                                                                                                                                                                                                                                                                            848
                                                                                                                                                                                                                                                                                                                                                                                                          821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
```

```
RESULT 15
GUX2_CLOSR
ID GUX2_CL
AC P50900
DT 01-OCT
DT 01-OCT
DT 01-OCT
DT 01-OCT
DT 01-OCT
CLLY
CC EACTER
OC CLOST
OC CLOST
OC NCBLT
RN (1)
RP SEQUEN
RC STRAIL
RA STANG
                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                    Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X55299; CAA39010.1; ALT_SEQ.
         SEQUENCE FROM N.A.
STRAIN-NCIB 11754;
Bronnenmeier K., Kundt K., R
Bronbauer W.L.;
Staudenbauer W.L.;
Submitted (FEB-1996) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P26221; 1TF4.
InterPro; IPR001956; CBD_3.
InterPro; IPR001701; Glyco_hydro_9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00592; GLYCOSYL_HYDROL_F9_1; 1.
PROSITE; PS00698; GLYCOSYL_HYDROL_F9_2; 1.
Cellulose degradation; Hydrolase; Glycosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00942; CBD_3; 2.
Pfam; PF00759; Glyco_hydro_9; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                               Clostridium stercorarium.
Bacteria; Firmicutes; Bac
Clostridium.
                                                                                                                                               p50900;
01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Exoglucanase II precursor (EC 3.2.1.91) (Exocellobiohydrolase
(1,4-beta-cellobiohydrolase II) (Avicelase II).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                          GUX2_CLOSR
                                                                                                                                                                                                                                                                                                                                       899
                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                   NCBI_TaxID=1510;
                                                                                                                                                                                                                                                                                       944
                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linkages in cellulose.
SIMILARITY: CONTAINS MULTIPLE CELLULOSE-BINDING SITES.
SIMILARITY: BELONGS TO CELLULASE FAMILY E (FAMILY 9 OF GLYCOSYL
                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                     1 MSVEFYNSNKSAQTNGITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYDROLASES).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S12021; S12021.
                                                                                                                                                                                                                                                                                                                                                            LGNSYVDNTSKYTANFYKETASPTSTYDTYLDPSHWRGC--LOGSSLIIISVFLYGCAON 118
                                                                                                                                                                                                                                                                                                                                                                                       IQIQMENGNTSDKTNGIMERYRLTNTGTTPIRLSDVKIRYYYTIDGEKDQNEWCDWSSV-
                                                                                                                                                                                                                                                                                      FSKADWTDYIQTNDYSFSTNTSYG-----SNDRITVYISGVLVSGI 984
                                                                                                                                                                                                                                                                                                                                       -----GSNNITGTFVK-MAEPKEGADYYLETGFTDGAGYLQPNQSIEVQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
47; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PD001947; CBD_3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26
498
651
744
854
835
400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        986 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                               ----QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGL 159
                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
986
641
738
831
986
986
400
                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.18; 27.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109512 MW;
                                                                                                                 Bacillus/Clostridium
                 the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN C'.

DOMAIN B.

DOMAIN B.

DOMAIN C.

CELLULOSE-BINDING (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                         Riedel K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 188;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENDOGLUCANASE
                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1802E09B22923690 CRC64;
                                                                                                                                                                                                                                914
                                                                                                                                                                                                                                                                                                                                                                                                                                                           و
                                           Schwarz W.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                  group; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Repeat; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 986
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                36;
                                                                                                                                                                                                                                                                                                                                                   --NR
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   898
                                                                                                                                                                                                                                                                                                                                                   943
                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
```

```
Ωy
                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
Search completed: October 27, Job time: 11.7271 secs
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pronnenmeier K., Ruecknagel K.P., Staudenbauer W.L.;
Bronnenmeier K., Ruecknagel K.P., Staudenbauer W.L.;
Pronting the Control of the class of a novel type of economic control of the control of the control of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains of the chains o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between the Bioinformatics Institute. There are no restrictions on its the by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=91364686; PubMed=1909625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-NCIB 11754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [2]
CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pfam; PF00942; CBD_3; 1.
pfam; PF02011; Glyco_hydro_48; 1.
pRINTS; PR00844; GLHYDRLASE48.
proDom; PD001947; CBD_3; 1.
prodom; PD011903; Glyco_hydro_48; 1.
prodom; PD011903; Glyco_hydro_1ase; Glyco_cllulose degradation; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hydrolase; Hyd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; Z69359; CAA93280.1; -. HSSP; Q06851; INBC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Interpro; IPR001956; CBD_3.
Interpro; IPR000556; Glyco_hydro_48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                      769
                                                                                                                                                                               826
                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                     3 VEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYDROLASES).
                                                                                                                                                                                                                                                            NSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                             IQSFNANTQEISNSIMPRFRIYNSGNTSIPLSEVKLRYYYTVDGDKPQNFWCDWASI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                               -GSSNVTGTFVKMDGATTGA-DYYLE 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          914 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103020 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.2%;
                                                                   2002, 11:10:53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 162.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXOGLUCANASE II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D0DB6017D6DFF82C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Glycosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .5; DB 1;
1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        914;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  non-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                          825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ.
        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
     285
276.
276.
249
249
249
233.5
233.5
188.5
181.5
113.5
1143.5
1143.5
1143.5
1143.5
1127.5
1127.5
1127.5
1129.5
113.5
113.5
113.5
113.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-677-374-6
1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               October 27, 2002, 11:05:56; Search time 16.3592 Seconds (without alignments) 1503.668 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
     231.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR_71:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pir1:*
pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
        Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                     A25972
PC6006
S36859
T30433
C97012
A47704
S12021
T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G97860
C33971
                                                                                         A43802
$02711
A489711
A48977
T31337
T17120
D83169
D83169
F87413
G69593
AI3418
JN0111
A27198
$23787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283138
                                                                                                                                                                                                                                                                                         thermoactive celluxylanase - Caldice cellulase (EC 3.2. cellulase (EC 3.2. mannan endo-1,4-beta-glucanase cellulase (EC 3.2.
                                                                                                                                                                          conserved hypothet hypothetical prote cellulase (EC 3.2. 17K surface antige
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17K antigen precu
scaffolding prote
cipA protein - Clo
conserved hypothecellulase homolog cellulase (EC 3.2
                                                                                                                 17K surface antigonal cellulase (EC 3.2 cellulase (EC 3.2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           scaffolding prote
probably cellulos
endoglucanase I ()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial common Rickettsial c
                                                                                            outer membrane li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellulose-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17K surface antig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      commo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cellulose-binding protein A precursor - Clostridium cellulovorans C;Species: Clostridium cellulovorans C;Date: 27-Jun-1994 #sequence_revision 27-Jun-1994 #text_change 15 C;Accession: A44140 R;Shoseyov, O.; Takagi, M.; Goldstein, M.A.; Doi, R.H. Proc. Natl. Acad. Sci. U.S.A. 89, 3483-3487, 1992 A;Title: Primary sequence analysis of Clostridium cellulovorans ce A;Reference number: A44140; MUID:92228810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary
A;Molecule type: genomic RNA
A;Molecule type: genomic RNA
A;Residues: 1-1848 <SHO'>
A;Cross-references: GB:M73817; NID:g144748; PIDN:AAA23218.1; PID:g144749
A;Cross-references: GB:M73817; NID:g144748; PIDN:AAA23218.1; PID:g144749
A;Gene-Coha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
A44140
```

ALIGNMENTS

27-Jun-1994 #text_change 15-Oct-1999

cellulose binding

pro

RESULT 2 D33971 ricketts N;Altern C;Specie C;Date: C;Access R;Anders J. Bacte	Db 1:	Оу 2:	Db 1	0у 1	Db 1:	0у 1:	рb	Qy	Db :	Qy	Query Ma Best Loo Matches	
RESULT 2 D33971 rickettsial common antigen precursor - Rickettsia prowazekii N;Alternate names: 17kD surface antigen; outer membrane protein (omp): RP833 C;Species: Rickettsia prowazekii C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000 C;Accession: D33971; B71645 C;Accession: B.E.; Tzianabos, T. R;Anderson, B.E.; Tzianabos, T. J. Bacteriol. 171, 5199-5201, 1989	186 GTA-PGPD 192	239 GTACPQPD 246	144GRITKSDWSNYTQTNDYSFDASSSTPVVNPKVTGYIGGAKVL 185	181 EKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY 238	125KKGQFITIQ 143	121 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180	93 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 124	61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120	33 MSVEFYNSNKSAGTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 92	1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60	Query Match 36.5%; Score 487; DB 2; Length 1848; Best Local Similarity 46.8%; Pred. No. 2.8e-32; Matches 116; Conservative 12; Mismatches 30; Indels 90; Gaps	

```
J. Bacteriol. 171, 5199-5201, 1989
J. Bacteriol. 171, 5199-5201, 1989
A. Title: Comparative sequence analysis of a gen
A. Reference number: A33971; MUID:89359171
A. Accession: B33971
A. Status: preliminary
A. Molecule type: DNA
A.; Residues: 1-159 <AND>
A.; Cross-references: GB:M28479; NID:9152463; PIDI
C; Superfamily: rickettsial common actions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A:Title: Comparative sequence analysis of a genus-common rickettsial antigen A:Reference number: A33971; MUID:89359171
A;Accession: D33971
A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M28482; NID:g152461
A;Note: the sequence in GenBank entry RIRANT17KC, release 109.0, (PID:g152462) omits the R;Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsmark, U. Nature 396, 133-140, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: The genome sequence of Rickettsia prowazekii and the origin of mitochondria. A;Reference number: A71630; MUID:99039499
A;Accession: B71645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-159 <ANZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386135
A;Experimental source: strain Madrid E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: omp; RP833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3

B33971

Rickettsial common antigen precursor - Rickettsia conorii
C;Species: Rickettsia conorii
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_/
C;Accession: B33971
C;Accession: B33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Molecule type: DNA
Residues: 1-159 <AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 61
                                                                                                                                     Вb
                                                                                                                                                                   QY
                                                                                               ρy
밁
                            Š
                                                                  DЬ
                                                                                                                                                                                                                                                                                                 Cross_references: GB:M28479; NID:g152463; PIDN:AAA26379.1; PID:g152464
                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                         103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
   120
                                                                      64
                                                                                                                                         SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAVLGGQTGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61;
                                  KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 253
                                                                                                    GGLIGSKIGQSMDQODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                    GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
 -RNSTGOYCREYTOTVVIGGKOOKAYGNACROPDGOWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21.6%;
                                                                                                                                                                                                                                    21.3%; Score 285; DB 2;
37.9%; Pred. No. 1.1e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32;
                                                                                                                                                                                                                         31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 288; DB 2;
pred. No. 6.3e-17;
2; Mismatches 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-Mar-1990 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                       genus-common
                                                                                                                                                                                                                                53
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 159;
                                                                                                                                                                                                                                                               Length 159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-Aug-1999
                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                        6,
```

¥.

RESULT C33971

```
Rickettsial common antigen precursor - Rickettsia rickettsii
C;Species: Rickettsia rickettsii
C;Species: Rickettsia rickettsii
C;Species: Rickettsia rickettsii
C;Species: Rickettsia rickettsii
C;Species: Rickettsial rickettsii
C;Accession: A33971
C;Accession: A33971
R;Anderson, B.E.; Tzlanabos, T.
J. Bacteriol. 171, 5199-5201, 1989
J. Bacteriol. 171, 5199-5201, 1989
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a genus-common rickettsial antigen
A;Reference number: A33971; MUID:89359171
A;Accession: A33971
A;Accession: A33971
A;Status: preliminary
A;Rolecule type: DNA
A;Residues: 1-159 <AND>
A;Cross-references: GB:M28480; NID:g152457; pIDN:AAA26376.1; PID:g152458
A;Cross-references: GB:M28480; NID:g152457; pIDN:AAA26376.1; PID:g152458
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
A33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17K surface antigen precursor [imported] - Rickettsia conorii (strain Malish C.Species: Rickettsia conorii C.Species: Rickettsia conorii C.Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C.Accession: G97860 C.Accession: G97860 S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Sam R.Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Sam R.; Catence 293, 2093-2098, 2001 Rickettsia conorii and Rickettsia prowaze A; Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowaze A; Reference number: A97700; MUID:21442074; pMID:11557893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                         A;Gene: omp
C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: DNA
A;Residues: 1-159 <KUR>
A;Cross-references: GB:AE006914; PIDN:AAL03825.1; PID:g15620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
                                                                                                                                                                      망
                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                     Qy
                                    δÃ
                                                                                Dр
밁
                                                                                                                                                                                                                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                               103 SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                              157
120
                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                     64
                                                                                                                                                                   5 SKIMIIALATSMLOACNGPGGMNKQGTGTLLGGAGGALLGSQPGKGKGQL-VGVGVGALL 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61;
                         KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                          GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
: |||||: | :| |::|: || || |||||:||::
-RNSTGOYCREYTQTVVIGGKQVKAYGNACRQPDGOMQVVN 159
                                                                                                                                                                                                                                                                61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G97860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21.3%; Score 285; DB 2; 37.9%; Pred. No. 1.1e-16;
                                                                                                                                                                                                                                                                21.3%; Score 285; DB 2;
37.9%; Pred. No. 1.1e-16;
stive 31; Mismatches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 159;
                                                                                                                                                                                                                                                                                                                  Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia prowazekii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         V.; Samson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۵
::
```

```
Rickettsial common antigen precursor - RicketC; Species: Rickettsia typhi
C; Date: 16-Mar-1990 #sequence_revision 16-Ma
C; Accession: C33971
R; Anderson, B.E.; Tzlanabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A; Title: Comparative sequence analysis of a A; Reference number: A33971; MUID:89359171
A; Accession: C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17K antigen precursor - Rickettsia rickettsii

(;Species: Rickettsia rickettsii

C;Date: 21-May-1988 #sequence_revision 21-May-1988 #text_change 20-Aug-1999

C;Accession: A25972

R;Anderson, B.E.; Regnery, R.L.; Carlone, G.M.; Tzianabos, T.; McDade, J.E.;

J. Bacteriol. 169, 2385-2390, 1987

A;Title: Sequence analysis of the 17-kilodalton-antigen gene from Rickettsia A;Reference number: A25972; MUID:87222152

A;Molecule type: DNA

A;Residues: 1-159 <AND>
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;M
scaffolding protein CipC precursor - Clostridium cellulolyticum (fragment)
C:Species: Clostridium cellulolyticum
C:Species: Clostridium cellulolyticum
C:Date: 17-Aug-1990 #sequence_revision 16-Aug-1996 #text_change 13-Nov-1998
C:Accession: PC6006
C:Accession: PC6006
R:Pages, S.; Belaich, A.; Tardif, C.; Reverbel-Leroy, C.; Gaudin, C.; Belai.
J. Bacteriol. 178, 2279-2286, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:M16486;
C;Superfamily: ricketteis:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                  PC6006
                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:M28481; NID:g152459; PIDN:AAA26377.1; PID:g152460 C;Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-159 < AND>
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QTTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QEIYGTACPOPDGRWQVIS 253
                                                                                                                                                                                                                                                                                                                                                                         KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKQGTGTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQIGASLDEQDRKLLEL
                                                                                                                                                                                                                                                                                                                                   -RNSTGQYCREYTQTVVIGGKQQKAYGDACRQPDEQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NID:g152467; PIDN:AAA26381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Pred. No. 5.8e-16; 27; Mismatches 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 276; DB z; Pred. No. 6.4e-16; Samatches 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 276.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genus-common rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PID: g152468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               McDade, J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia
                                  Belaich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fu,
```

```
cipA protein - Clostridium thermocellum N; Alternate names: probable cellulosome C; Species: Clostridium thermocellum C; Date: 13-Jan-1995 #sequence_revision 1 C; Accession: S36859; S3527; S25767; S28 R; Gerngross, U.T.; Demain, A.L.
                                                                                                                                               A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-1615,1617-1854 <GE2>
A;Cross references: EMBL:L08665
A;Cross references: EMBL:L08665
R;Fujino, T.; Beguin, P.; Aubert, J.P.
TEMS Microbiol. Lett. 94, 165-170, 1992
A;Title: Cloning of a Clostridium thermocellum
A;Reference number: $25767
A;Accession: $25767
                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:LO8665
R;Gerngross, U.T.; Romaniec, M.P.M.; Kobayashi, T.; Huskisson, Mol. Microbiol. 8, 325-334, 1993
Mol. Microbiol. 8, 325-334, 1993
A;Title: Sequencing of a Clostridium thermocellum gene (cipA) e A;Reference number: S33527; MUID:93302508
A;Accession: S33527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;1-27/Domain: signal sequence #status predicted <SIG>F;28-986/Product: scaffolding protein CipC #status predicted F;28-187/Domain: cellulose binding #status predicted <CBD>F;188-192/Domain: hydrophilic <HYL>F;293-439/Domain: hydrophobic <HYB1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:U40345; NID:g1314291; A;Experimental source: ATCC 35319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type:
A; Residues: 1-586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Interaction between the endoglucanase CelA and the scaffolding protein A; Reference number: PC6006; MUID:96218696 A; Accession: PC6006
                                                                A;Molecule type: DNA
A;Residues: 1216-1232,'Y',1234-1241,'T',1243-1319,'R',1321-1615,1617-1854
A;Cross-references: EMBL:X67406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Gerngross, U.T.; Demain, submitted to the EMBL Data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Genetics:
A; Reference number: A; Accession: S28659
                                        submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: S36859
A; Accession: S36859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Gerngross,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F;440-586/Domain: hydrophobic <HYB2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Residues: 1-1854 <GER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \mathfrak{S}_{\mathfrak{S}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cipc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LGNSYVDNTSKVTANFVKETASPTSTYDTYLD---PSHMRGCLQGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IKLNQSLEKVKAG-----QVTRWRNPDTGNSYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VSVQFNNGSSPASSNSIYARFKVTNTSGSPINLADLKLRYYYTQDADKPLTFWCDHAGYM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -TINPTSISAKAGSFADTKITLTPNGNTFNGIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGSNYIDATSKYTGSF-KAVSPAYTNADHYLEVALNSDAGSLPAGGSIEIQTRFARNDWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1-586 <PAG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 249; DB 2; Pred. No. 5.7e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -GSYMDWQKISAFVGGTLAYG--STPDGGNPPPQDP
                                          August 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-Jan-1995 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PID:g1314292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T18261
                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81;
                                                                                                                                                                                            fragment encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <MAT>
                                                                                                                                                                                                                                                                                                                                                                                          encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                  N.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                            polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                     Demain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                     A.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cipc
                                                                                                                                                                                              tha
```

Tue

```
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Nolecule type: DNA
A;Residues: 1821-1854 <FU2>
A;Cross-references: EMBL:X67506; NID:g296879; PID:g296880;
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: DNA
A;Residues: 1216.1232,'Y',1234-1241,'T',1243-1319,'R',1321-1615,1617-1768,'R',1770-1854
A;Residues: 1216.1232,'Y',1234-1241,'T',1243-1319,'R',1321-1615,1617-1768,'R',1770-1854
A;Cross-references: EMBL:X67406
A;Cross-references: EMBL:X67406
R;Fujino, T; Beguin, P.; Aubert, J.P.
R;Fujino, T; Beguin, P.; Aubert, J.P.
J. Becteriol. 175, 1891-1899, 1993
J. Becteriol. 175, 1891-1899, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: Z18847; MUID:93209931
A; Accession: T18261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Organization of a Clostridium thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
T30433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Reference number: 220837; MUID:98361925
A;Accession: T30433
A;Status: preliminary; translated from GB,
A;Molecule type: DNA
A;Residues: 1-1162 <KAK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Gene: cipA
                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:AB004845; NID:g3445476; PIDN:BAA32429.1; PID:g3445477 C;Genetics: A;Gene: cipA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                               RESULT 11
C97012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Cloning and DNA sequencing of the
                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 53
probably cellulosomal scaffolding pro C; Species: Clostridium acetobutylicum
                                                                                              밁
                                                                                                                  δÃ
                                                                                                                                                 Вb
                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ
                                                                                              198
                                                                                                                             174
                                                                                                                                                                                                                       93
                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                            1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                      SGNNYMDVTSKYSGTF-NEVSPAVTNADHYLEVALSSDAGSLPAGGSIEIQTRFARNDWS
                                                                                                                                                                                                                                                  LGNSYVDNTSKVTANFVKETASPTSTYDTYLDP--SHMRGCL-QGSSLIIISVFLVGCAQ
                                                                                                                                                                                                                                                                                  NFDQSNDWSYTSA-
                                                                                                                                                                                     NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK 173
                                                                                                                          IKLNQSLEKVKAGQ 187
                                                                                                -KISPTSISAKQGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
53; Conser
                                                                                                                                                                                                                                                                                                                                               66;
                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18.4%;
                                                                                                                                                                                                                                                                                                                                                               17.5%;
                                                                                                  210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16; Mismatches
                                                                                                                                                                                                                                                                                                                                                31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 245; DB 2
Pred. No. 5e-12;
                                                                                                                                                                                                                                                                                                                                                               Score 233.5; DB 2
Pred. No. 2.6e-11;
                     protein
                                                                                                                                                              -GSYMDWQKIAAFVGGTLVYG--STPNGDDNPTQDP 197
                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB/EMBL/DDBJ
                      precursor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genes encoding Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                    74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1854;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                           secreted,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIDN:CAA47840
                           cellulose-binding and
                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T.; Karita,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          josui scaffolding
                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                            92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w
T
                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s.;
                                con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
```

δÃ

183

VKAGQVTRWRNPDTGNSYSVEPVRTYQR

```
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001 C;Accession: C97012
R;Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gib: Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing E A;Reference number: A96900; MUID:21359325; PMID:21359325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:AE001437; PIDN:AAK78886.1; A;Experimental source: Clostridium acetobutylicum C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-1483 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                            A47704

A47704

A47704

A47704

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

Charles Clostridium thermocellum

RHBAZlewood, G.P.; Davidson, K.; Laurie, J.I.; Huskisson, N.S.; Gilbert, H.J.

RHBAZlewood, G.P.; Davidson, K.; Laurie, J.I.; Huskisson, N.S.; Gilbert, H.J.

Gen. Microbiol. 139, 307-316, 193

J. Gen. Microbiol. 139, 307-316, 193

A; Hile: Gene sequence and properties of Cell, a family E endoglucanase from A; Reference number: A47704; MUID:93171873

A; Accession: A47704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                               A;Cross-references: GB:L04735; NID:g144807; PIDN:AAA20892.1; A;Note: sequence extracted from NCBI backbone (NCBIN:125637, C;Keywords: glycosidase; hydrolase
                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA; p
A;Residues: 1-879 <HAZ>
                                                                                                           Qy
                                                                                                                                                   밁
                                                                         В
망
                               QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                   742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAC0910
                                     123
                                                                                                               63
                                                                                                                                                                                                                                           Local
                                                                                                                                                                       3 VEFYNSNKSAQTNSITDIIKITNTSDSDLNLNDVKVRYYYTTSDGTQGQTFWCDHAGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NGYNYQTITSNVVGTFV-AMDNATATADHYLEISFSNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LGNSYVDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VQIQFADTNTSTTMNTIAPKFKITNNTGAPLDLTTLKLRYYFTADGTQDENFWCDHAGML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKVKAGQVTRWRNPDTGNSYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ROEVGAATGAVVGGVAGQLFGKCSGRVSMAIGGAVLGGLIGSKIGOSMDQQDKIKLNQSL 180
                                                                                                           NSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFSRQ 122
                                                                                                                                                   LQYANGNAGATSNSINPRFKIINNGTKAINLSDVKIRYYYTKEGGASQNFWCDWSSA--G
                                   EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEK 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
57; Conser
                                                                                                                                                                                                                             l Similarity
59; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                             -SNVTGNFF-NLSSPKEGADT-----CL--
                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYCINSOCIANSM
                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16.7%; Score 223.5; DB 2 28.4%; Pred. No. 2.4e-10;
                                                                                                                                                                                                                                                 14.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      164
                                                                                                                                                                                                                                   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                               Score 188.5; DB 2;
Pred. No. 1.1e-07;
0; Mismatches 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PID:g15023809;
ATCC824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -DAGSSLEVQCRVAKND--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                       Indels
             EVQIRFSKED
                                                                                                                                                                                                                                                                                                                                     PID: g144808
NCBIP: 125638)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSPDB:GN00168
                                                                                                                                                                                                                                         81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gibson,
                                                                                                                                                                                                       62
                                                                                       821
                                                                                                                                                                   799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostrid
                                                                                                                                                                                                                                             9
```

```
N.J. Gen. Genet. 223, 258-267, 1990

A.Title: Sequence analysis of the Clostridium stercorarium celz gene encoding a thermoach; Reference number: $12021; MUID:91066838

A.;Accession: $12021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R:Morris, D.D.; Glbbs, M.D.; Ford, M.; Thomas, J.; Bergquist, P. submitted to the EMBL Data Library, December 1997
A;Description: Family 10 and 11 xylanase genes from Caldicellulc A;Reference number: 220972
A;Accession: T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N;Alternate names: avicelase I
C;Spectes: Clostridium stercorarium
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 24-Jul-1997
C;Accession: S12021
R;Jauris, S; Ruecknagel, K.P.; Schwarz, W.H.; Kratzsch, P.; Bronnenmeier, Mol. Gen. Genet. 223, 258-267, 1990
Mol. Gen. Genet. 223, 258-267, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      xylanase - Caldicellulosiruptor sp.
C;Species: Caldicellulosiruptor sp.
C;Date: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text_change 02-Sep-2000
C;Accession: T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
S12021
Thermoactive cellulase - Clostridium stercorarium
RESULT
A43802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                            밁
                                                                                                           Ş
                                                                                                                                                     ₽
                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                          A; Note: xynC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-1779 <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references:
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                              Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                            1196
                                                                                                                                                       1174
                                                                                                                                                                                                                                    1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119
                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 944 FSKADWTDYIQTNDYSFSTNTSYG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  849
                    15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                              59
                                                                                                                                                                                                                                                                      1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHA--G 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IQIQMENGNTSDKTNGIMPRYRLTNTGTTPIRLSDVKIRXXXTIDGEKDQNEWCDWSSV-
                                                                                                                                                                                                                                LKVLYKNNETSASTGSIRPWFKIVNGGSSSVDLSRVKIRYWYTVDGDKPQSAVCDWAQIG 1173
                                                                                                                 FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSM 149
                                                                                                                                                     A-----SNVTFNFVKLT-SGVSGADYYL--
                                                                                                                                                                                         ALLGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGC--LQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 Similarity 27.6
47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-986 <JAU>
                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                            EVGFSSG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----WSNYNQSNDYSFKQACLRQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GSNNITGTFVK-MAEPKEGADYYLETGFTDGAGYLQPNQSIEVQ-----NR
                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    <MOR>
                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL: AF036924; NID: g2760905; PID: g2760909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGL 159
                                                                                                                                                                                                                                                                                                                               11.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14.18; 27.68;
                                                                          AGQLQPGKDTGDIQV 1217
                                                                                                                                                                                                                                                                                                             15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29;
                                                                                                                                                                                                                                                                                                                               Score 151.5; DB 2
Pred. No. 0.00032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 188; DB 2;
Pred. No. 1.4e-07;
9; Mismatches 58;
                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----SNDRITVYISGVLVSGI 984
                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                             35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caldicellulosiruptor sp. Rt69B.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 986
                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                   1779;
                                                                                                                                                                                                                                                                                                                                                                                                                              PIDN: AAB95326.1
                                                                                                                                                                                                                                                                                                             51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36;
                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                             6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6,
```

Search completed: October Job time: 19.3592 secs

27,

2002,

11:11:39

```
R;Saul, D.J.; Williams, L.C.; Grayling, R.A.; Chamley, L.W.; Love, Appl. Environ. Microbiol. 56, 3117-3124, 1990
A;Title: celB, a gene coding for a bifunctional cellulase from the A;Reference number: A43802; MUID:91136262
A;Accession: A43802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cellulase (EC 3.2.1.4) / cellulose 1,4-beta-cellobiosidase N;Alternate names: endo-1,4-beta-glucanase C;Species: Caldocellum saccharolyticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Superfamily: Streptomyces endo-1,4-beta-xylanase A homology C;Keywords: glycosidase; hydrolase; polysaccharide degradation F;20-320/Domain: Streptomyces endo-1,4-beta-xylanase A homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-915 <SAU>
A; Cross-references: EMBL:X13602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Date: 30-Jan-1993 #sequence_revision 30-Sep-1993 #text_change 10-Jul-1998 C;Accession: A43802
                                                                                                                       δÃ
                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                         DЪ
                                                                                                                                                                                                                                                                                                                                                                                 Ş
멍
                                   δÃ
                                                                               망
                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary; nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Pathway: cellulose degradation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Description: hydrolysis of 1,4-beta-D-glucosidic linkages
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                       411
499
                                                                                 458
                                                                                                                           178
                                                                                                                                                                     433
                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                         351 IKVLYANKETNSTTNTIRPWLKVVNSGSSSIDLSRVTIRYWYTVDGERAQSAVSDWAQIG 410
                                       238
                                                                                                                                                                                                                                                                                               59
                                                                                                                                                                                                                                                                                                                                                                             1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHA--G 58
                                     YGTACPQPDGRWQVISTEK 256
                                                                                                                                                                                                           FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLN 177
                                                                                                                                                                   ----EIGFKSG-----AGQLQPGKDTGEI---
                                                                                                                                                                                                                                                       A-----SNVTFKFVK-LSSSVSGADYYL------
----PSTNDDWLYVSGNK
                                                                                                                         QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEI 237
                                                                                                                                                                                                                                                                                               ALLGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                             ; 09
                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                 DWSNYNQGNDWSW--LQSMTSYGENEKVTAYI--
                                                                                                                                                                                                                                                                                                                                                                                                                                             11.0%; 23.2%;
512
                                                                                                                                                                                                                                                                                                                                                                                                                             ω
5;
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 147; DB 2;
Pred. No. 0.00034;
5; Mismatches 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                           64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 915
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       not compared
                                                                                 -DGVLVWGQE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (EC 3.2.1.91) - Caldocellu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 beta-D-glucans
                                                                                                                                                                   -QIRFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D.R.; Bergquist, P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                extreme thermophil
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       with
                                                                                                                                                                                                                                                       432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                             11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 such
```

as

THIS PAGE BLANK (USPTO)

E

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 08
                                                                                                                                    472
472
245
245
245
149.5
148.5
148.5
122.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /cgn2_6/ptodata/1,
3: /cgn2_6/ptodata/1,
4: /cgn2_6/ptodata/1,
5: /cgn2_6/ptodata/1,
6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-677-374-6
1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      October 27, 2002, 11:08:02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     231628 seqs,
     335.35
355.35
355.35
355.35
355.37
355.37
355.37
355.37
355.37
355.37
355.37
355.37
355.37
355.37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000000000
     GenCore version (c) 1993 - 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gapext 0.5
US-09-277-716-22
US-08-460-462-2
US-08-460-457-2
US-08-460-458-2
US-08-460-455-2
US-08-30-394A-2
US-08-30-394A-2
US-08-30-394A-2
US-08-30-394A-2
US-08-30-394A-2
US-08-30-394A-2
US-08-30-394A-2
US-09-198-956-10
US-09-198-956-11
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-4
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
US-09-136-574A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Search time 13.2642 Seconds
(without alignments)
471.414 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.1.3
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                               sequence
sequence
sequence
sequence
sequence
 sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
                                2, Appli
2, Appli
2, Appli
2, Appli
2, Appli
2, Appli
7, Appli
7, Appli
7, Appli
29, Appli
29, Appli
20, Appli
10, Appli
11, Appli
12, Appli
14, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
12, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256
                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                Ş
                                                                                                                             . 망
                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-277-716-22
                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 22, Application US/09277716A Patent No. 6232107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/277,716A CURRENT FILING DATE: 1999-03-26 EARLIER APPLICATION NUMBER: 60/102,939 EARLIER FILING DATE: 1998-10-01 EARLIER APPLICATION NUMBER: 60/089,367 EARLIER FILING DATE: 1998-06-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Bryan, Bruce
APPLICANT: Szent-Gyorgyi,
APPLICANT: PROLUME, LTD.
TITLE OF INVENTION: LUCIFE
                                                                                                                                                                   118
                                                                                                                                     121
                                                                                                                                                                                                     61
                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                     ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LUCIFERASES, FLUORESCENT PROTEINS, NUCLEIC ACIDS ENCODING THE
```

ALIGNMENTS

Christopher

```
RESULT 2
US-08-048-164A-2
US-08-048-164A-2
; Sequence 2, Application US/08048164A
; Patent NO. 5496934
; GENERAL INFORMATION:
; APPLICANT: Shoseyov, Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; FEATURE:
; OTHER INFORMATION: Cellulose Binding Domain (CBD)-Gaussia luciferase fusion prote
US-09-277-716-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 22
LENGTH: 382
TYPE: PRT
ORGANISM: Artificial Sequence: fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity Matches 107; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EARLIER APPLICATION NUMBER: 60/079,624 EARLIER FILING DATE: 1998-03-27 NUMBER OF SEQ ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                       1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                          LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCL---QGSSLIIISVFLVGCAQ
                                                                                                                                                                                               NYTQTNDYSFDASSSTPVVNPKVTGY - - - -
                                                                                                                                                                                                                    NFSRQ----EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGA-VLGGLIGS 162
                                                                                                                                                                                                                                                                                                                                                     MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYVEFGFASGAATLKKGQFITIQGRITKSDWS
                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              36.0%;
62.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 480.5; DB 4
Pred. No. 4.1e-41;
0; Mismatches 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                33;
                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                 117
                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                  4
```

NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS: APPLICANT: DOI, RO TITLE OF INVENTION:

Goldstein,

Itai Marc A.

Roy H

CELLULOSE BINDING DOMAIN

ADDRESSEE:

E: PENNIE & EDMONDS

STATE: New York

COUNTRY: U ZIP: 10036

New York Y: U.S.A.

```
APPLICANT: DOI, ROY H.
TITLE OF INVENTION: METHODS OF USE OF CELLULOSE BINDING DOMAIN PROTEINS
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MSVEFYNSNKSAQTNGITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 MSVEEYNSNKSAQTNSITPIIKITHTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 477; DB 1; Length 162; pred. No. 2.7e-41; 2; Mismatches 0; Indels
Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , MOLECULE TYPE: protein US-08-460-462-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
US-08-460-457-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08460457 Patent No. 5719044 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 90; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING PATENTIN Release #1.0,
CURRENT APPLICATION NUMBER: US/08/460,457
APPLICATION NUMBER: US/08/460,457
FILING DATE: concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,462
APPLICATION NUMBER: US/08/460,462
FILING DATE: concurrently herewith
CTARSTITICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REPERENCE/DOCKET NUMBER: 780:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
APPLICATION 14-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Shpiegl, Ital
APPLICANT: Goldstein, Marc A.
                                                                                                                              FILING DATA:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
APPLICATION APPLICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: DOI, ROY H.
TITLE OF INVENTION: CELLULOSE BINDING DOMAIN FUSION PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Misrock, S. Leslie REGISTRATION NUMBER: 18,8
                                              REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                      CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MSVETYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acids
                                                                                                                                                                                                                                                                                                                                                                10036
                                                                                                                                                                                                                                                                                                                                                                                                                                           1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   shoseyov, Ode
shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                        U.S.A.
                 : (212) 790-9090
(212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PENNIE & EDMONDS
                                                                                                                                                                                                    concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 08/048,164
                                                                                                                                                                                                                                                                             Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2:
                                                                                                                                                                                                                                           US/08/460,457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7809-006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 477; DB 1;
pred. No. 2.7e-41;
                                                                               7809-008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

δÃ В Š

US-08-460-462-2

Patent No.

, Application US/08460462 5670623

GENERAL INFORMATION:
APPLICANT: Shoieg

APPLICANT:

Goldstein, Marc A. Doi, Roy H. Shpiegl, Itai Shoseyov, Oded

COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
COMPUTER: FIRE PC COMPUTER: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,

CITY: New York STATE: New York

ZIP: 10036 COUNTRY:

U.S.A.

STREET:

ADDRESSEE: PENNIE & EDMONDS STREET: 1155 Avenue of the Americas

MOLECULE TYPE: protein US-08-048-164A-2

TELEX: 66141 PENNIE INFORMATION FOR SEQ ID NO: 2:

TELEFAX:

TELEPHONE:

(212) 790-9090 (212) 869-8864/9741

SEQUENCE CHARACTERISTICS

LENGTH: 162 amino acids
TYPE: amino acid
TOPOLOGY: linear

FILING DATE: 14-APR-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Misrock, S. Leslie
REGISTRATION NUMBER: 18,8

APPLICATION NUMBER: US/0: FILING DATE: 14-APR-1993

US/08/048,164A

REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:

7809-003

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPRESS SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:

Query Match 35.7%; Best Local Similarity 97.8%; Matches 90; Conservative

۶,

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; MOLECULE TYPE: protein
US-08-460-457-2
밁
                           ş
                                                                                                                        ; MOLECULE TYPE: US-08-460-458-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-460-458-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/08460458 Patent No. 5738984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                               Matches
                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,458
FILING DATE: Concurrently herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/048,164
FILING DATE: 14-APR-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                 TELEFAX: (212) 869-8864/9:
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 162 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 18,872
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 11. CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                         TYPE: ami
TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66 LGNSYVDNTSKYTANFYKETASPTSTYDTYVE 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                              ۲
σ
              MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90;
                                                            Similarity 97.8
90; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H: 162 amino acids amino acid
                                                                                                                                                       1: 162 amino acids
   amino acid
)GY: linear
                                                                                                                                                                                                                                                                                                                                Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1155 Avenue of the Americas
                                                                                                                                                                                                                                                     (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shoseyov,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PENNIE & EDMONDS
                                                                                                                                                                                                                                                                                                                                                                                                                        concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KITS AND METHODS OF DETECTION USING CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.7%;
                                                                            35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                                                     7809-007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 477; DB 1;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                             Score 477; DB 1;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 162;
                                                                                         Length 162;
                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                             0;
                                                                                            US-08-330-394A-2
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-460-455-2
 밁
                               οy
                                                                 В
                                                                                               δÃ
                                                                                                                                                                                                 ; MOLECULE TYPE: US-08-460-455-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08460455 Patent No. 5837814
                                                                                                                                 Best Local Similarity
Matches 90; Conserv
                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                TELEFAX: (212) 869-886
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/460,455
FILING DATE: concurrently herewith
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 781
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION: NAME: Misrock, S. Leslie
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 14-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Doi, Roy TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1155 A
CITY: New York
STATE: New Yor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
 66
                               61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                               1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                               LENGTH:
LGNSYVDNTSKYTANFYKETASPTSTYDTYVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                               MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: PENNIE & EDMONDS
1155 Avenue of the Americas
                                                                                                                                                                                                                                                                   162 amino acids
                                                                                                                                                                                                                                                                                                                                   (212) 869-8864/9741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goldstein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shoseyov,
                                                                                                                                 Conservative
                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     concurrently herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CELLULOSE BINDING DOMAIN PROTEINS
                                                                                                                                               35.7%;
97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0ded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US 08/048,164
                                                                                                                                                                                                                                                                                                                                                                                                   18,872
                                                                                                                                                                                                                                                                                                                                                                                     7809-009
                                                                                                                                                 Score 477; DB 2; Pred. No. 2.7e-41;
                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97
 97
                                                                                                                                   0;
                                                                                                                                                                  Length 162;
                                                                                                                                   Indels
                                                                                                                                 0;
                                                                                                                                 Gaps
                                                                                                                                   0
```

Sequence 2, Application US/08330394A Patent No. 5856201

GENERAL INFORMATION:

APPLICANT:

Shoseyov, Oded Yosef, Karmey

APPLICANT:

Shpiegl, Itai Goldstein, Marc

P

us/09/006,636

```
US-08-330-394A-2
                                                                                                                                                                                                                                                                                              RESULT 8
US-09-006-636-7
US-09-096-636-7
; Sequence 7, Application US/09006636
; Sequence 7, Application US/09006636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-8864
TELEX: 66441 PENNIE
TELEX: 66441 PENNIE
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
LENGTH: 162 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: DOI, ROY I
TITLE OF INVENTION: I
TITLE OF INVENTION: I
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08
FILING DATE: 27-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: CIP.
                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
NAME: MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1155 AVENUE OF THE AMERICAS CITY: NEW YORK STATE: NEW YORK COUNTRY: I' C' R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 78
REFERENCE/DOCKET NUMBER: 78
TELEPHONE: (212) 790-9090
TELEPAX: (212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 10036
                                                                                                                                                                                                                  TITLE OF INVENTION: ARABIDOPSIS THALIANA ENDO-1,4-BETA-TITLE OF INVENTION: GLUCANASE GENE, PROMOTER AND PROTEI
                                                                                                                                                                                                                                                APPLICANT: Shoseyov, Oded APPLICANT: Shani, Ziv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 162 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
                                                                                                                                                                                         CORRESPONDENCE ADDRESS
SOFTWARE: FASTSEQ Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                       1 MSVEEYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 65
                                                                                                                                                         ADDRESSEE:
STREET: 11
                                 COMPUTER: IBM CON OPERATING SYSTEM:
                                                                                                                                        CITY: New York
                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity 97.8
90; Conservative
                                                                                               10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Doi, Roy H.
                                                                                                                              ΝY
                                                                                                                                                          E: Pennie & Edmonds LLP
1155 Avenue of the Americas
                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/330,394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 477; DB 2;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                                                                                                                                                                                                 PROMOTER AND PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-006-636-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-006-632-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Shoseyov, APPLICANT: Shani, Ziv APPLICANT: Shapigel, E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: sin
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
les 90; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1155 AV
CITY: New York
STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                   STRANDEDNESS:
                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baldwin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                               10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
```

밁 8

δÃ

```
Sequence 7, Application US/09006632
Patent No. 6184440
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 31,232
REGISTRATION NUMBER: 78
REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-909
TELEPHONE: (212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 163 amino acids
                                                                                            CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
ANAME: Baldwin, Geraldine F.
NAME: Baldwin, Geraldine F.
REGISTRATION NUMBER: 31,232
REFERENCE/DOCKET NUMBER: 7809-018
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEPHONE: (212) 790-9090
TELEPAX: (212) 869-8864
                                      TELEFAX: (212) 869-8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Shpigel, Etai
TITLE OF INVENTION: TRANSGENIC PLANTS OF ALTERED
TITLE OF INVENTION: MORPHOLOGY
                                                                                                                                                                                                                                                           OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: Pennie & Edmonds LLP
STREET: 1155 Avenue of the Americas
          : 163 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoseyov, Oded
                                                                                                                                                                                                                                                                                                               IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Geraldine
single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35.7%;
97.8%;
                                                                                                                                                                                                                                                     US/09/006,632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7809-019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 477; DB 3;
Pred. No. 2.7e-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

```
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: linear ; MOLECULE TYPE: peptide US-09-006-632-7
                                   밁
                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-330-394A-29
                                                                                                                                    US-08-330-394A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                    Matches
                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                         TELEFAX: (212) 869-880
TELEX: 66441 PENNIE
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 78
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                           FILING DATE: 14-APR-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                   FILING DATE: 27-OCT-PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                           SOPTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION UNMBER: US/08/330,394A FILING DATE: 27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy
                                                                                                                                                                                              SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: METHODS OF DETECTION USING TITLE OF INVENTION: CELLULOSE BINDING DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                             TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                Local
                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 61
GNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                    SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     90;
                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                               10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 97.
                                                                                               Similarity
                                                                                                                                                                                                                                                                                  MISROCK, S. LESLIE
                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/08330394A
                                                                                                                                                                                  154 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1155 AVENUE OF THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Doi, Roy H
                                                                                                                                                                                                                                 : (212) 790-9090
(212) 869-8864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yosef, Karmey
Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goldstein, Marc A.
                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shoseyov, Oded
                                                                                                                                                           linear
                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35.7%;
97.8%;
                                                                                             35.48;
                                                                                                                                                                                                                                                                                                                     CIP OF PCT/US94/04132
                                                                                  Score 472; DB 2;
Pred. No. 8.2e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                      7809-005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 477; DB 4;
Pred. No. 2.7e-41;
2; Mismatches 0
                                                                                    0
                                                                                                         Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                    0,
                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                    0
                                                                                                                                                                                 Š
                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                          В
                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent
```

```
Query Match
Best Local Similarity
~~*~hes 89; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                   ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-330-394A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-330-394A-22
                                                                                                                                               PCT-US95-13813-9
                                                                                                                 Sequence 9, Application PC/TUS9513813 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: DOI, ROY H.
TITLE OF INVENTION: METHODS OF
TITLE OF INVENTION: CELLULOSE F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 14-APR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 156 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                APPLICANT:
                                                                                APPLICANT:
                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT
                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (212, TELEFAX: 66441 PENNIE TELEX: 66441 PENNIE
                                                                                                                                                                                                                 61 GNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                                                                                                                                                                                                 62 GNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: MISROCK, S. LESLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/330,394A FILING DATE: 27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GNSYVDNTSKVTANFVKETASPTSTYDTYVE 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                  1 SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 60
                                                                                                                                                                                                                                                                                                     2 SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08330394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: PENNIE & EDMONDS
1155 AVENUE OF THE !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (212) 790-9090
(212) 869-8864
                                                           Yeda Research and Development Co. Ltd. Ramot University Authority for Applied Research and Industrial Development Ltd.
                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Goldstein, Marc A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shpiegl, Itai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yosei,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shoseyov,
Wilchek,
             Bayer, Edward
Morag, Ely
                                               Technion Research and Development Foundation Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Karmey
                                                                                                                                                                                                                                                                                                                                                                  35.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CIP OF PCT/US94/04132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE AMERICAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7809-005
                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                 Score 472; DB 2;
Pred. No. 8.4e-41;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DETECTION USING
                                                                                                                                                                                                                 91
                                                                                                                                                                                                                                                   92
                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                Length 156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THE
                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                   61
```

Page

Lamed, Raphael

(CBD)

```
APPLICANT: Andersen, Lene N.
APPLICANT: Andersen, Martin
APPLICANT: Lange, Niels Erik K.
APPLICANT: Lange, Niels Erik K.
APPLICANT: Sonnorr, Kirk
APPLICANT: Sonnorr, Kirk
APPLICANT: Sonnorr, Kirk
TITLE OF INVENTION: Pectin Degrading Enzymes From Bacillus
TITLE OF INVENTION: Licheniformis
TITLE OF INVENTION UNMBER: US/09/198,956
CURRENT APPLICATION NUMBER: 1344/97
EARLIER APPLICATION UNMBER: 1344/97
EARLIER FILING DATE: 1997-11-24
EARLIER APPLICATION NUMBER: 60/067,240
EARLIER FILING DATE: 1997-12-02
EARLIER FILING DATE: 1997-12-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US95-13813-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-09-198-956-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Shoham, Yuval
TITLE OF INVENTION: MODIFIED CELLULOSE-BINDING DOMAIN
TITLE OF INVENTION: PROTEINS AND USE THEREOF
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                             Sequence 10, Application US/09198956 Patent No. 6165769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk COMPOUTER: IBM PC COMPATIBLE COMPOUTER: IBM PC COMPOUTER: PC-DOS/MS-DOS OPERATING SYSTEM: PC-DOS/MS-DOS OFTWARE: PATENTIA PLICATION DATA: APPLICATION NUMBER: PCT/US95/13813

APPLICATION NUMBER: PCT/US95/13813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (202) 737-3528
TELEX: 248633
TELEX: 268630 IN NO: 9:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
LENGTH: 167 amino acids
SEQ ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 628-5197
TELEFAX: (202) 737-3528
                     NUMBER OF SEQ ID NOS: 26
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: BA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Browdy, Roger L. REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                           68 IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419 Seventh Street N.W., Ste. 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Browdy and Neimark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18.4%; Score 245; DB 5; Length 167; 51.5%; Pred. No. 1.7e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BAYER=3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
```

```
, ORGANISM: Bacillus licheniformis US-09-198-956-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-198-955A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/198,955A
CURRENT FILING DATE: 1998-11-24
CURRENT FILING DATE: 1998-11-24
PRIOR APPLICATION NUMBER: 1343/97
PRIOR FILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 1344/97
PRIOR FILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/067,249
PRIOR FILING DATE: 1997-12-02
PRIOR FILING DATE: 1997-12-02
PRIOR APPLICATION NUMBER: 60/067,240
PRIOR APPLICATION NUMBER: 60/067,240
PRIOR APPLICATION NUMBER: 09/073,684
PRIOR APPLICATION NUMBER: 09/073,684
PRIOR FILING DATE: 1998-05-06
PRIOR FILING DATE: 1998-05-06
PRIOR FILING DATE: 1998-05-06
PRIOR FILING DATE: 1998-05-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 53; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence 12, Application US/09198955A
patent No. 6187580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                       TYPE: PRT CORGANISM: Clostridium thermocellum US-09-198-955A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 4:
TYPE: PRT
                                                                                                                                                          В
                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                           δÃ
RESULT 15
US-09-136-574A-43
; Sequence 43, Application US/09136574A
; Patent No. 6294366
                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 12
LENGTH: 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Kongsbak, Lars
TITLE OF INVENTION: NO. 6187580el Pectate Lyases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    335 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      394 IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISETGGTLE 435
                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MSVBEYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                            335 LKVEEYNSNPSDTTNSINPQEKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 393
                                                                                             394 IGSNGSYNGITSNYKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                         61 LGN--SYVDNTSKVTANEVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                 53;
                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                       FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Moller, Survey O. S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kauppinen, Markus
Schnorr, Kirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bjornvad, Mads E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lange, Niels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schulein, Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            1998-11-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18.4%; Score 245; DB 4; 51.5%; Pred. No. 8.3e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lene
                                                                                                                                                                                                                                               18.4%; Score 245; DB 4; 51.5%; Pred. No. 8.3e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                               09/184,217
                                                                                                                                                                                                                                   16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                            30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                        Length 493
                                                                                                                  435
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                 4..
                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ψ
                                                                                                                                                                                                                                                      ω
```

```
; molecule Type: No. 6394366e; SEQUENCE DESCRIPTION: SEQ ID NO: 43: US-09-136-574A-43
                                                                                                                               Ş
                                                                                                                                                                              В
                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                             ş
Search completed: October 27, 2002, 11:12:14 Job time: 14.2642 secs
                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                       Query Match 11.2%; Score 149.5; DB 4; Length 1426; Best Local Similarity 32.9%; Pred. No. 2.4e-06; Matches 50; Conservative 16; Mismatches 35; Indels 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEX: <Unknown>
INFORMATION FOR SEQ ID NO: 43:
SEQUENCE CHARACTERISTICS:
LENGTH: 1426 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                 COUNTRY USA
ZIP: 19477

COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
CURRENT APPLICATION NUMBER: US/09/136,574A
FILING DATE: 19-Aug-1998
CLASSIFICATION - CUNKNOWN>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/932,571
FILING DATE: SEPTEMBER: US 08/932,571
FILING DATE: SEPTEMBER: 19, 1997
ATTORNEY/AGENT INFORMATION:
NAME: BAK, MATY E.
BEGISTERATION NUMBER: 31 315
                                                                                                                                                                           474 A-----SNVTENEVK-LSSGVSGADYYL----
                                                                                                                                  119 FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSM 149
                                                                                                                                                                                                                       59 ALLGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: 1997US001/CIP
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215-540-9200
TELEFAX: 215-540-5818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 49
CORRESPONDENCE ADDRESS:
ADDRESSEE: Howson and Howson
STREET: Spring House Corporate Center, P.O. Box 457
CITY: Spring House
STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Daniels, Roy
Morgan, Hugh W.
Williams, Diane P.
WILLIAMS, Diane P.
TITLE OF INVENTION: Compositions and Methods for
Treating Cellulose Containing Fabrics Using Truncated
Cellulase Enzyme Compositions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Farrington, Graham K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anderson, Paige
Gibbs, Moreland
Bergquist, Peter
                                                                                        -AGQLQPGKDAGDIQV 517
                                                                                                                                                                                                                                                                                                                                                       Indels 51; Gaps
                                                                                                                                                                                                                                                                                                                                                         6;
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                      Pred. No. score great and is dea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B B
                                                                                                                                                                                                                                       Score
                                                                          1335
832
815
815
487
487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq
                                                                                                                                                                                                                                                                                                                                      No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A_Geneseq_032802:*
1: /SIDS1/gcgdata/gc2: /SIDS1/gcgdata/gc3: /SIDS1/gcgdata/gc3: /SIDS1/gcgdata/gc5: /SIDS1/gcgdata/gc5: /SIDS1/gcgdata/gc5: /SIDS1/gcgdata/gc7: /SIDS1/gcgdata/gc7: /SIDS1/gcgdata/gc7: /SIDS1/gcgdata/gc7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length:
                                                                                                                                                                                                                                     Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-677-374-6
1335
1 MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              747574 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      October 27, 2002, 10:58:51;
100.0
62.3
61.0
36.5
36.5
36.5
36.5
36.5
                                                                                                                                                                                                                                                                                                                                                                                                                     18:
19:
20:
21:
22:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10:
11:
12:
12:
13:
14:
15:
16:
                                                                                                                                                                                                                                                                                                                                                                                                         SIDSI/gcgdata/geneseq/geneseqp-embl/AA1981 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1982 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1983 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1985 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1986 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1987 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1998 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1991 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1992 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1993 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1995 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1998 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1997 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:

SIDSI/gcgdata/geneseq/geneseqp-embl/AA1990 DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5:1.3
Copyright (c) 1993 - 2002 Compugen
                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000000000
256
161
162
162
190
328
341
162
163
428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111073796 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapext 0.5
                                                                                                                                                                                                                                         В
  IJ
AAB81128
AAB81127
AAC78025
AAB81126
AAE05746
AAE05747
AAE05747
AAE05747
AAR636363
                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Search time 34.0449 Seconds (without alignments) 835.217 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           747574
              OspA antigen amino Clostridium cellul Chimeric S peptide Clostridium cellul Cellulose binding Clostridium cellul Clostridium cellul Clostridium cellul
                                                                                                                                                                                                                                     Description
                                                                                                                                                       C17E2 OspA constru
Optimised OspA pro
Piscirickettsia sa
Gaussia
luciferase
```

245 149.5 148.5 118.5 1126.5 113.5 113.5 113.5 113.5 113.5 1102.5 1102.5 100.5 100.5 98 98 98 995 995 995 995 995 995 995 9	477 472 245 245
118.4 118.4 111.2 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1 111.1	
531 1426 616 1751 1751 1751 1352 1352 1355 1355 1355 1355 2224 499 2223 2233 2233 2233 2233 2330 922 922 922 922 922 922 922 922 922 92	, w - 1 w w w w
118 118 119 119 119 119 119 119 119 119	20 20 20 17 21
AAY43218 AAW15238 AAW15238 AAW15238 AAY13492 AAY13493 AAG63963 AAG63963 AAW18790 AAR42122 AAR42122 AAR4362105 AAB20105 A	AAW90077 AAW90081 AAW95080 AAW95080 AAY54123 AAY28850
Pectate lyase CBD Scaffoldin protein C. thermocellum Ce Truncated cellulas Truncated cellulas Truncated cellulas Truncated cellulas Truncated cellulas Truncated cellulas Corrected Bacillus NK-1 cellulase B Ospa B-cell epitop Moraxella catarrha Porphorymonas ging Cellulase AE-1. A PBOMP-2 gene prod. Novel endoglucanas Chlamydia pneumoni Chlamydia pneumoni Chlamydia pneumoni Chlamydia pneumoni Novel human RO284 (UNQ2 Human PRO284 (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PRO284) (UNQ2 Human PR	20222

ALIGNMENTS

RESULT 1 AAB81128

11-JUL-2001 (first entry)

AAB81128;

AAB81128 standard; Protein;

256

A

```
Poikilothermic fish; Piscirickettsia salmonis; rickettsial pathogen; vaccine; OspA; salmonid rickettsial septicaemia; rickettsial disease; SRS; 17E2; fusion construct.
                                                                                                                           Region
                                                                                                                                             Key
Region
                                      17-SEP-1999;
                                                                             CA2281913-A1
                                                                                                                                                                          Synthetic
                                                                                                                                                                                    Piscirickettsia
                                                                                                                                                                                                                                             C17E2 OspA construct with N-terminal fusion partner.
(KAYW/) KAY W W.
                   17-SEP-1999;
                                                         17-MAR-2001.
                   99CA-2281913
                                      99CA-2281913
                                                                                                                                                                                     salmonis.
                                                                                              /label= Undefined_N-terminal_fusion_partner
96..256
/label= C17E2_OspA
/note= "Product of OspA gene optimised for expression
Escherichia coli"
                                                                                                                                                       Location/Qualifiers
```

'n

Tue

N-PSDB;

```
Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This invention relates to a method for the protection against infection of a polkilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a salmonis specific antigen termed oppa, or an immunogenic fragment of p. salmonis specific antigen termed oppa, or an immunogenic tragment of particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen p. salmonis. The method is also useful for protecting against salmonid p. salmonis. The method is also useful for protecting against salmonid sequence represents the amino acid sequence of C17E2, a p. salmonis OspA sequence represents the amino acid sequence of C17E2, a p. salmonis OspA construct optimised for expression in Escherichia coli, fused to an undefined N-terminal fusion partner. The fusion protein is used in a undefined N-terminal fusion partner. The fusion protein is used in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BURI/) BURIAN J.
(KUZY/) KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kay WW, Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 4; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                      AAB81127 standard; Protein; 161
                                                                                                                                                                  Optimised OspA protein 17E2 amino acid sequence.
                                                                                                                                                                                                        11-JUL-2001
Region
                                                   synthetic.
                                                                     piscirickettsia
                                                                                                                        Poikilothermic vaccine; OspA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ROEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ROEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256;
                                                                                                                                                                                                                                                                                                                                                         ACPOPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                           ACPOPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAF86248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                          (first entry)
                                                                                                                          salmonid
                                                                                                                                        fish; Piscirickettsia
                                                                         salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kuzyk MA;
       Location/Qualifiers 109..128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                             rickettsial septicaemia; rickettsial disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1335; DB 22; pred. No. 1.5e-122; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                RESULT 3
AAG78027
ID AAG77
XX AAG77
XX AAG77
XX AAG7
DT 15--
CAY P1s
XX P1s
KW Sepp
KW Sepp
KW ATCU
XX P1s
XX P1s
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CA2281913-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (KAYW/)
(BURI/)
(KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention relates to a method for the protection against infection of a polkinchermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a salmonis specific antigen termed OspA, or an immunogenic fragment of P. salmonis specific antigen termed OspA, or an immunogenic fragment of particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen particularly polkilothermic fish, against the bacterial pathogen pathonis. The method is also useful for protecting against salmonid P. salmonis ospA protecting against salmonis sequence represents optimised P. salmonis OspA protein 17E2. The DNA sequence represents optimised P. salmonis OspA protein 17E2 (AAF86247) has been optimised for expression in Ecsherichia coli. An OspA protein with an N-terminal fusion partner is Ecsherichia coli. An OspA protein with an N-terminal fusion partner is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for protecting poikilothermic fish against salmonid rickettsial septicaemia and other rickettsial diseases comprises administering a vaccine containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 5; 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAF86247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kay WW, Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                      AAG78025 standard; Protein; 162
                                                                                                                                                  Piscirickettsia salmonis polypeptide P10.6.
                                                                                                                                                                                      15-JAN-2002
                                                                                                                                                                                                                         AAG78025;
                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                   septicaemia;
ATCC VR-1361
                                                                                                                    Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                             216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          piscirickettsia
                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-316844/34.
                                                                                                                                                                                                                                                                                                                                        RROQYCREFOOKAMIAGOKOEIYGTACPOPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                            LGGLIGSKIGOSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KUZYK M A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62.3%;
milarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99CA-2281913
                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= B_cell_epitope
                                                                                                         SRS;
                                                                                                      salmonis; piscirickettsiosis; salmonid rickettsial;
s; surface antigen; vaccine; antibacterial; fish;
                                                          salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kuzyk MA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 832; DB 22;
pred. No. 1.6e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
```

0

Gaps

0

215

В Ş

Matches

밁 δÃ

61 61

8

121

121

γQ Вр

Вþ δÃ

181

241

ARBSULT 2
AABBUZT 7
ID AABBUXX
XX AABE
AC AABE
XX 11--XX OPT:
XX POI!
KW POI!
KW VACO
KW VACO
KW SRS
XX PIS
OS Syn
XX PIS
SS Syn
XX REH KEY

Key

```
ð
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                         밁
                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-MAR-2000;
01-JUL-2000;
01-JUL-2000;
29-JUL-2000;
                                                                                                                                                                                                                                                                                                                               The invention relates to nucleic acid sequences and the encoded proof a least part of the surface antigen present on Piscirickettsia salmonis for production of a vaccine with antibacterial activity protect fish against P. salmonis which causes piscirickettsiosis, known as salmonid rickettsial septicaemia.
                                                                                                                                                                                                                                                                                                                                                                                Claim 6; Fig 5; 25pp; English.
                                                                                                                                                                                                                                                                                                                                                                                             New nucleic acids encoding
surface antigen present on
protect fish against pisch
                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burzio
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Simard
                                    Key
Region
                                                                                  Poikilothermic vaccine; OspA;
                                                                                                        OspA antigen amino acid sequence
                                                                                                                                       AAB81126;
                                                                                                                                                       AAB81126 standard;
                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR-2001;
17-MAR-2001
                                                                                                                        11-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (AQUA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200168865-A2
               CA2281913-A1
                                                             Piscirickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-SEP-2001
                                                                                                                                                                                            123
                                                                                                                                                                                                          217
                                                                                                                                                                                                                                         157
                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                         RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                             2001-639050/73.
DB; AAH79040.
                                                                                                                                                                                           ROQYCREFQQKAMIAGQKQEIYGTACRQPDGRWQVISTEK
                                                                                                                                                                                                    RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                        RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVAMAIGGAVL
                                                                                                                                                                                                                                                                                       158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŗ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AQUA
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                    162
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brouwers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000GB-0005838.
2000GB-0016080.
2000GB-0016082.
2000GB-0018599.
                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HEALTH
                                                                                                                                                                                                                                                                                                                                                                                              against piscirickettsiosis
                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001WO-GB01055
                                                                                  fish; Piscirickettsia salmonid rickettsial s
                                                                                                                                                                                                                                                                                                                    A
A
                                                             salmonis
                                     Location/Qualifiers
                              /label-
                                                                                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EURO
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ή,
                                                                                                                                                                                                                                                                                            61.0%;
                              B_cell_epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTD.
                                                                                                                                                                                                                                                                                                                                                                                                 an amino acid sequence homologous to Piscirickettsia salmonis are useful trickettsiosis -
                                                                                                                                                       162
                                                                                                                                                                                                                                                                                     Score 815; DB 22;
Pred. No. 7.6e-72;
1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Griffiths
                                                                                  a salmonis; rickettsial pathogen;
septicaemia; rickettsial disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                            162
                                                                                                                                                                                                          256
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Valenzuela
                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                     162;
                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                         to
, also
                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                 ρy
                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                             οy
```

```
RRESULT 5
AAE057A
AAE07A
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AAE07
AC AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                        yarn; fiber; textile; biological crosslinker; mechanical property; Clostridium cellulovorans cellulose binding domain; wet strength; durability; elasticity; CBDclos; cellulose binding profess.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention relates to a method for the protection against infection of a poikilothermic fish by the bacterial pathogen, Piscirickettsia salmonis. The method comprises administering an immunogenic amount of a P. salmonis specific antigen termed OspA, or an immunogenic fragment of OspA in the form of a vaccine. The method is used for protecting animals, particularly poikilothermic fish, against the bacterial pathogen P. salmonis. The method is also useful for protecting against salmonid rickettsial septicaemia (SRS) and other rickettsial diseases. The present sequence represents P. salmonis OspA protein. An OspA protein with an N-terminal fusion partner is used in a vaccine to create an anti-OspA antibody recents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     septicaemia vaccine cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (KAYW/)
(BURI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium cellulovorans cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kay WW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-SEP-1999;
                                                                                                                                                                 Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE05746;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAE05746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (KUZY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
les 158; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RGCLQGSSLTITSVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-316844/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for protecting poikilothermic fish against salmonid rickettsial aemia and other rickettsial diseases comprises administering a e containing the OspA protein of Piscirickettsia salmonis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KAY W W.
BURIAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2; Fig 2B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF86246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KUZYK M A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Burian J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 AA;
                                                                                                                                                                     cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99CA-2281913.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99CA-2281913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuzyk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΜĂ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 815; DB 22;
Pred. No. 7.6e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                       domain-180 (CBD-180).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156
                                                                                                                                                                                                                                                                         ٩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

17-MAY-2001 WO200134091-A2

```
RESULT 6
AAE05749
ID AAE0
XX
AC AAE0
XX
DT 24-S
                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                             Вp
                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                             ρ
                                                                                                                                                                     ρ
                                                                                                                                                                                                     В
                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fiber in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to methods and compositions for cross-
linking and/or modifying the properties of polysaccharide materials.
The method involves treating the polysaccharide structure with a
polysaccharide binding domain (PBD) fusion protein. The method is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1.2; Fig 1e-1g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence is Clostridium cellulovorans cellulose binding domain (CBD)-180. CBD-180 contains 180 amino acids of C. cellulovorans CBD (CBDclos) of cellulose binding protein A (CBP A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
         24-SEP-2001
                                       AAE05749;
                                                                    AAE05749 standard;
                                                                                                                                                                                                                                     181
                                                                                                                                             154
                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                                                                                                                 2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J
                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                             GTA-PGPD 160
                                                                                                                                                                                                                                  EKYKAGQYTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY
                                                                                                                                                                          GTACPOPD 246
                                                                                                                                                                                                     ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP-
                                                                                                                                                                                                                                                                                          {\tt RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YISSUM RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nussinovitch A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0164140.
99US-0166389.
            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą,
                                                                       Protein; 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoseyov
                                                                                                                                                                                                                                                                     FGFASGRATL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 487; DB 22;
Pred. No. 1.4e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                         30;
                                                                                                                                                                                                                                                                           -KKGQFITIQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                  KVTGYIGGAK--VL 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                           90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                              111
                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
```

```
The present invention relates to methods and compositions for cross-
CC linking and/or modifying the properties of polysaccharide materials.
CC The method involves treating the polysaccharide structure with a
CC polysaccharide binding domain (PBD) fusion protein. The method is
CC used to alter the structural, chemical, physical, electrical and
CC mechanical properties of polysaccharide materials such as paper,
CC yarns, fibers and textiles, using biological crosslinking agents.
CC yarns, fibers and textiles, using biological crosslinking agents.
CC properties such as wet strengths, durability and elasticity. The PBD
CC reagent is applied in the forming stage in fluting paper manufacture
CC which eliminates the sizing step. The use of a biological crosslinker
CC improves the recyclability of paper products. The PBD reagent maintains
CC improves the recyclability of paper products. The pBD reagent maintains
CC infine fibers in a slurry therefore resulting in better recovery of
CC the fine fibers in a slurry therefore resulting in better recovery of
CC which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chimeric
Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polysaccharide modification; polysaccharide binding domain; PBD; paper yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CBD; chimeric protein; S peptide-cellulose binding domain-S protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chimeric protein; S per
Spep-CBD-Sprot; bovine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chimeric S peptide-cellulose binding domain-S protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-457121/49.
N-PSDB; AAD11046.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                           Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CBDT-) CBD TECHNOLOGIES LTD.
(YISS ) YISSUM RES DEV CO HEBREW UNIV JERUSALEM.
                                                                                                                                                                                                                                                                                                                                                                                 Example 4; Fig 4b-4g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Levy I,
                                             Note:
                                                                                                        The present sequ
Sequence
                                                                              and bovine.
                                                                                    The present sequence is (Spep-CBD-Sprot), a fusi
                                                ID NO:
                                sequence has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nussinovitch A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bos
                                sequence is stated to be the same as that shown as 10 in the sequence listing of the specification. Hence has 2 additional residues at its C-terminal.
      328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "This region 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "Encoded 327. 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "This region is derived 226..326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 30..208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label= Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ote= "These residues are absent in the sequence SEQ ID NO: 10 in the sequence listing"
                                                                                            e is S p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoseyov 0;
                                                                                              peptide-cellulose
protein derived 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      derived
                                                                                                      from
                                                                                                                     binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from C. cellulovorans"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from bovine"
                                                                                                    ding domain-S protein
Clostridium cellulovorans
                                                          However
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         paper;
```

Query Match

36.5%;

Score 487;

DB

22;

Length 328

46.8%;

ŗ

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 116; Conserv
                                                                                                                                                                                                                                                                                                                                                              Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; cellulose binding domain; CBD;
                                                                                                                                                                         08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                    Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                            24-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE05747 standard; Protein; 341 AA.
                                                                                                                                          (CBDT-)
                                                                                                                                                                                                     02-NOV-2000; 2000WO-IL00708
                                                                                                                                                                                                                         17-MAY-2001.
                                                                                                                                                                                                                                             WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                AAE05747;
 The present invention relates to methods and compositions for cross-
linking and/or modifying the properties of polysaccharide materials.
                               Example 1.2;
                                                  property
                                                          Preparation of a polysaccharide containing material having at least desired structural, chemical, physical, electrical and/or mechanical
                                                                                                     WPI:
                                                                                                                       Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188 GTA-PGPD 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        239 GTACPQPD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                      strength; durability; cross linker protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS
                                                                                                   2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ROEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP-----
                                                                                                                                         CBD TECHNOLOGIES LTD.
YISSUM RES DEV CO HEBREW UNIV JERUSALEM
                                                                                         AAD11044.
                                                                                                                       Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                  cellulovorans.
                                                                                                                                                                                                                                                                                                                                                                                                      cellulovorans CBD cross linker protein
                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                              Fig
                                                                                                                                                                        99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                    341
                                                                                                                                                                                                                                                                                                       340..343
                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                              2b-2e; 121pp; English
                                                                                                                                                                                                                                                                /note= "This residue is absent
as SEQ ID NO: 6 in the sequence
                                                                                                                                                                                                                                                                                             /note-
                                                                                                                       P
                                                                                                                                                                                                                                                                                            "Encoded by CCATAGGAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FGFASGRATL ----
                                                                                                                                                                                                                                                                                                                                                        elasticity;
CCP.
                                                                                                                       Shoseyov 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 2.9e-39;
2; Mismatches 30;
                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---KKGQFITIQ--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----KVTGYIGGAK--VL
                                                                                                                                                                                                                                                                in the sequence shown
e listing"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90;
                                                                     at least one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                                                                                                                                                                                                                            RESULT 8
AAR63634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                    δÃ
   Query Match
Best Local Sim
Matches 116;
                                                                                                                                                                                          05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
   Doi RH,
                                                                                                                               Clostridium
                                                                                                                                                                                                               AAR63634;
                                                                     14-APR-1994;
                                                                                         27-OCT-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 penetrate paper.
                                                   14-APR-1993;
                                                                                                                                                                                                                                                                                                      239
                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                     GTACPQPD
```

```
The method involves treating the polysaccharide structure with a polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is Clostridium cellulovorans cellulose binding domain (CBD) cross linker protein (CCP).

Note: This sequence is stated to be the same as that shown as SEQ ID NO: 6 in the sequence listing of the specification. However this sequence has an additional residue at its C-terminal.
                                                                                                                                                                                                                                                                                                                                                                                                      Cellulose binding domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR63634 standard; Protein; 162
                                                                                                                                                                                                                                                                                                                                                      Cellulose binding domain; CBD
                                            (REGC ) UNIV CALIFORNIA.
(YISS ) YISSUM RES & DEV CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTA-PGPD 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----FGFASGRATL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGNSYVDNTSKVTANFVKETASPTSTYDTYVE----
Goldstein MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341 AA;
                                                                                                                                                                                                                                                                                                            cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
                                                                                                                                                                 94WO-US04132
                                                                                                                  93US-0048164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36.5%;
Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 487; DB 22;
Pred. No. 3.1e-39;
2; Mismatches 30;
Ó
Shpiegl I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---KKGQFITIQ------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -KVTGYIGGAK--VL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92
```

7;

```
ARESULT 9
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AAEUST45
AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAQ72917/R63634 is a novel isolated cellulose binding domain. It pref. binds crystalline with a Kd ranging from 1.5 microM. 0.5 microM. C pref. with a Kd of <1.2 microM, esp. <1.0 microM. The protein and C the encoding DNA are claimed, as is a CBD fusion protein fep? C comprising the CBD and a second protein. The second protein is pref. C reversing the CBD and a second protein. The second protein is pref. C an environmental pollutant, or an HSP, HSP antibody, cross-reactive HSP-related protein or an antigenic portion of this. The CBD and FP C may be used in drug delivery, affinity sepns. and diagnostic techniques. CBD nucleic acid may be obtd. from a variety of cell c sources that produce CBDs that bind with high affinity and in a c source of CBD encoding nucleic acid is C. cellulovorans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Isolated cellulose binding domain and fusion proteins - with applications. including drug delivery, affinity separations. diagnostic techniques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1994-341767/42.
N-PSDB; AAQ72917.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Fig 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE05745 standard; Protein; 163
                                                                                                                                                                                                                                                                                                                                          Polysaccharide modification; polysaccharide binding domain; PBD; parn; fiber; textile; biological crosslinker; mechanical property; Clostridium cellulovorans cellulose binding domain; wet strength; durability; elasticity; CBDclos; cellulose binding protein A; CBP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE05745;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-SEP-2001
                                                                                                                                                                                                                                                                                         Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                           02-NOV-2000; 2000WO-IL00708
                                                08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                        WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 51.7
les 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LGNSYVDNTSKVTANEVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EKVKAGQVTR--WRNPDTGNSYSVE 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LGNSYVDNTSKVTANFVKETASPTSTYDTYVE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----GRITKSDWSNYTQTNDYSFD 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cellulovorans cellulose binding domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125pp; English.
                                                   99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36.2%;
51.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -FGFASGRATL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 483; DB 15;
Pred. No. 2.7e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -KKGQFITIQ--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CBDclos).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pref.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  paper;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
```

```
RESULT 10
AAE05748
                                                                                                                                                                                                                                                                                                                                                              Вр
                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                               QΥ
Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polysacharide binding domain (pBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and mechanical properties of polysacharide meterials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD properties such as wet strengths, durability and elasticity. The PBD properties such as wet strengths, durability and elasticity. The PBD properties such as the forming stage in fluting paper manufacture reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains improves the recyclability of paper products. The PBD reagent maintains raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CBDT-) CBD TECHNOLOGIES LTD. (YISS) YISSUM RES DEV CO HE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Levy I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to methods and compositions linking and/or modifying the properties of polysaccharide the method involves treating the polysaccharide structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1.1; Page 111-112; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   property
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                penetrate paper.
                                                                                                                                                                                                                      AAE05748 standard; Protein; 428
                                                         Polysaccharide modification; polysaccharide binding domain; PBD; paper; yarn; fiber; textile; biological crosslinker; mechanical property; wet strength; durability; elasticity; protein A-cellulose binding domain;
                                                                                                                                                                                         AAE05748;
               Clostridium cellulovorans
                                               ProtA-CBD
                                                                                                                          Clostridium cellulovorans
                                                                                                                                                          24-SEP-2001
                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                                                                                 181 EKVKAGQVTR--WRNPDTGNSYSVE 203
                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                61 LGNSYVDNTSKVTANEVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVELVGCAQNES 120
                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-457121/49
                                                                                                                                                                                                                                                                                                                                                                                              RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                              LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 esent sequence is Clostridium cellulovorans cellulose binding (CBDclos) of cellulose binding protein A (CBP A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD11042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nussinovitch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                    -GRITKSDWSNYTQTNDYSFD 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                      ----FGFASGRATL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36.2%;
51.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shoseyov
                                                                                                                               protein A-cellulose binding domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 483; DB 22;
Pred. No. 2.7e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                           ----KKGQFITIQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      materials. with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cross
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66
                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                  117
```

ŗ

```
20
                                                     В
                                                                                ş
                                                                                                                Matches
                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                  mechanical properties of polysaccharide materials such as paper, yarns, fibers and textiles, using biological crosslinking agents. The polysaccharide containing materials have improved mechanical properties such as wet strengths, durability and elasticity. The PBD reagent is applied in the forming stage in fluting paper manufacture which eliminates the sizing step. The use of a biological crosslinker improves the recyclability of paper products. The PBD reagent maintains the fine fibers in a slurry therefore resulting in better recovery of raw materials. The PBD molecules are eluted by strong alkaline conditions which enhances the ability of the alkaline glue used in binding to
                                                                                                                                                                                                   binding domain (ProtA-CBD). This sequence contains a part of CBP A protein and a part of protein A derived from pRTT2T vector sequence Note: This sequence is stated to be the same as that shown as SEQ ID NO: 8 in the sequence listing of the specification. However this sequence has 2 additional residues at its C-terminal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Levy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention relates to methods and compositions for cross-
linking and/or modifying the properties of polysaccharide materials.
The method involves treating the polysaccharide structure with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Preparation of a polysaccharide containing material having at least one desired structural, chemical, physical, electrical and/or mechanical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-NOV-1999;
18-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                      polysaccharide binding domain (PBD) fusion protein. The method is used to alter the structural, chemical, physical, electrical and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200134091-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                            The present sequence is Clostridium cellulovorans Protein A-cellulose
                                                                                                                                                                                                                                                                                           penetrate paper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CBDT-) CBD TECHNOLOGIES LTD
330
                                                        270
                           61
                                                     Local
            LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-457121/49
                                                                                                                106;
                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nussinovitch
                                                                                                                                                                         428
                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fig 3b-3g; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-IL00708
                                                                                                                                                                         ۶
ج
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0164140.
99US-0166389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "E
427..428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /label- Protein_A
/note- "This region is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= Unknown
/note= "Encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'label - CBP_A_protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEV CO HEBREW UNIV JERUSALEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO: 8 in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .426
                                                                                                                             36.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shoseyov O;
                                                                                                               9:
                                                                                                                           Score 483; DB 2
Pred. No. le-38;
                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      are absent in the sequence sequence listing"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       derived from pRIT2T vector"
                                                                                                                                          22;
                                                                                                               14;
                                                                                                                                         Length 428;
                                                                                                               Indels
                                                                                                               76;
                                                                                                                                                                                                                                              sequence
                                                                                                             Gaps
                                                      329
                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    shown
                                                                                                               4;
```

```
RESULT 11
AAY39952
ID AAY39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
27-MAR-1998;
15-JUN-1998;
01-OCT-1998;
                                        bioluminescence-generating systems, assays, screening methods, diagnostic method and articles of manufacture. They can be expressed using e.g. bacterial, yeast, fungal, plant, insect or animal cells. The Renilla mulleri, Gaussia and Pleuromamma luciferase or Renilla or Ptilosarcus GrPs can be used in e.g. toys, cosmetics, fountains, personal care items, fairy dust, beverages, soft drinks, foods, textile products, bubble bath, balloons, personal items, dentrifrices, soaps, body paints, bubble bath, ink or paper products. In particular, they can be used in e.g. squirt guns, pellet guns, finger paints, foot bags, greeting cards, slimy play material, clothing, bubble making toys, bath powders, cosmetics, body lotions, gels, body powders, body creams, toothpastes, mouthwashes, soaps, body paints, bubble bath, inks, wrapping paper, gelatins, icings, frostings, greeting cards, beer, wine, champagne, soft drinks, icings, ice, dry ice or fountains. The nucleic acids can also be used to produce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PROL-)
(BRYA/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaussia luciferase fusion protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-DEC-1999
                                                                                                                                                                                                                                                                                                  This sequence represents a luciferase of the invention. The inventes to Renilla mulleri, Gaussia and Pleuromamma luciferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1999-580443/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9949019-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaussia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY39952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY39952
                                                                                                                                                                                                                                                                      Renilla and Ptilosarcus green fluorescent protein proteins. The luciferases and GFPs can be used in
                                                                                                                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                  New isolated Renilla mulleri, Gaussia and Pleuromamma luciferase and Renilla and Ptilosarcus green fluorescent protein nucleic acids -
                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAZ27550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bioluminescence-generating system; toy; cosmetic; fairy dust; beverage;
body paint; squirt gun; balloon; slimy play material; soap; toothpaste;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Luciferase;
                              transgenic fish and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EKVKAGQVTR - - WRNPDTGNSYSVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROLUME
BRYAN B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -GRITKSDWSNYTQTNDYSFD 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        green fluorescent protein;
                                                                                                                                                                                                                                                                                                                                                    Page 222-223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0079624.
98US-0089367.
98US-0102939.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US06698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                            plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGFASGRATL --
                                                                                                                                                                                                                                                                                                                                                    233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GFP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFP; screening assay;
cosmetic; fairy dust;
                                                                                                                                                                                                                                                                                     protein (GFP) nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -KKGQFITIQ--
                                                                                                                                                                                                                                                                                                                   The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosis;
                                                                                                                                                                                                                          The Renilla
                                                                                                                                                                                                                                                      diagnostic
                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                      acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
```

Query Match Best Local Similarity

36 62 . 6%;

Score Pred.

480.5; DB :

20;

Length 382;

Sequence

382

AA;

```
RESULT 12
AAW90077
ID AAW90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
Matches
          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                   27-OCT-1994;
14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C. cellulovorans CbpA CBD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW90077 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cellulose binding domain; CBD; CbpA; fusion protein; diagimmunoassay; heat-shock protein; cross reactive protein; antigenic fragment; antibody; insulin-dependent diabetes cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW90077;
                                                                                                                                                                                                                                                                                                                                                              (REGC )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium cellulovorans
                                                                       This sequence represents a cellulose binding domain (CBD) derived from the CbpA protein of Clostridium cellulovorans. The sequence is used the construction of a fusion protein which can be used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD, has very high affinity for cellulose (including to it. The CBD) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M), but crystalline forms) and chitin (dissociation constant 0.8-1.4 mu M) a wide pH range and is not released from cellulose by washing with water.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                Detection of a specific analyte by reaction with binding agent fu-
to cellulose binding domain - and subsequent treatment with
cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                               HPI;
                                                                                                                                                                                                               Claim 3;
                                                                                                                                                                                                                                       for the
                                                                                                                                                                                                                                                                                                                                       Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MSVEFYNSNKSAQTNSTTPIIKTTNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NFSRQ-----EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGA-VLGGLIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCL---QGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NYTQTNDYSFDASSSTPVVNPKVTGY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107;
                                                                                                                                                                                                                                                                                                                 1999-105130/09
                                                                                                                                                                                                                                                                                                                                                                UNIV CALIFORNIA.
YISSUM RES & DEV
  90;
                                                                                                                                                                                                                                                                                                   AAV74072
                                                                                                                                                                                                                                       analyte
               Similarity
                                                                                                                                                                                                                                                                                                                                       Goldstein MA,
                                                                                                                                                                                                               Fig 1A-B; 63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                   94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                                                                                                                                                                                                                                RES & DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                     94US-0330394
                                                    ĀĀ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
               35.7%;
                                                                                                                                                                                                                                                                                                                                           Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162
 ; Score 477; DB 20; Pred. No. 1e-38; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĄΑ
                                                                                                                                                                                                                                                                                                                                           Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fusion protein; diagnosis; HSP;
                                                                                                                                                                                                                                                                                                                                           Shpiegl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -IGGAKVLGTAPGS 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.
                               20;
         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                              Length 162;
       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      detection;
mellitus;
                                                                                                                                                                                                                                                                                 agent fused
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
          Gaps
           0
```

7

밁 Q

Matches

Conservative

0;

Indels

0

Gaps

N

SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 61

```
RESULT 13
AAW90081
                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                  27-OCT-1994;
14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cellulose binding domain; CBD; CbpA; fusion protein; diagnosis; HSP immunoassay; heat-shock protein; cross reactive protein; detection; antigenic fragment; antibody; insulin-dependent diabetes mellitus; cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW90081 standard; Protein; 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C. cellulovorans CBD-KpnI fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW90081;
                                                                                                                                                                                                                                                                                                                                (REGC )
(YISS )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clostridium
                                                                           This sequence represents a fusion protein (CBD-KpnI) composed of the Cb protein cellulose binding domain (CBD) from Clostridium cellulovorans This protein is used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD has very high affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mu m), but has almost no cellulolytic or amorphogenic activities. The CBD binds over a wide pH range and is not
                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Synthetic.
                                                                                                                                                                                                                                   Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                  27-OCT-1994;
                                                                                                                                                                                                 Claim 5; Column 55-56; 63pp; English.
                                                                                                                                                                                                                                                                                    WPI; 1999-105130/09
                                                                                                                                                                                                                                                                                                          Doi RH,
                                                                                                                                                                                                                           for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                            Sequence
                                                                     released
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNIV CALIFORNIA.
YISSUM RES & DEV
89; Conserv
                                                                                                                                                                                                                                                                                                          Goldstein MA,
                                                                      from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cellulovorans.
                                               154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                   94US-0330394.
93US-0048164.
94WO-US04132.
                                                                      cellulose by washing
                                                                                                                                                                                                                                                                                                                                                                                                                   94US-0330394
                                               AA;
                                                                                                                                                                                                                                                                                                                                    & DEV
            35.4%;
                                                                                                                                                                                                                                                                                                             Shoseyov 0,
                                                                                                                                                                                                                                                                                                                                      ၀
  Score 472; DB Pred. No. 3e-3
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΑA
               472; DB 2
No. 3e-38;
                                                                         with water.
                                                                                                                                                                                                                                                                                                              Shpiegl I;
                             20;
                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 diagnosis; HSP
                               154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
                                                                                                                                                                                      CbpA
          0
```

₹.

```
밁
                  δ
                                                   밁
                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                        Matches
                                                                                                                                                                                             This sequence represents a fusion protein composed of the CbpA protein cellulose binding domain (CBD) from Clostridium cellulovorans and a heat shock protein (HSP) fragment. This protein is used in diagnostic immunoassays, e.g. to detect heat-shock proteins (HSP) and their cross-reactive proteins, antigenic fragments or HSP-specific antibodies (which indicate insulin-dependent diabetes mellitus, or susceptibility to it. The CBD has very high affinity for cellulose (including crystalline forms) and chitin (dissociation constant 0.8-1.4 mm M), but has almost no cellulolytic or amorphogenic activities. The CBD binds over has almost no cellulolytic or amorphogenic activities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-OCT-1994;
14-APR-1993;
14-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                        Detection of a specific analyte by reaction with binding agent fused to cellulose binding domain - and subsequent treatment with cellulose and reaction of insoluble product with a label specific
                                                                                                                                                                                                                                                                                                                                                                                                                                WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clostridium cellulovorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   antigenic cellulose;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cellulose binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Doi RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (REGC ) UNIV CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US5856201-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW90080
                                                                                                                                                            Sequence
                                                                                                                                                                                     a wide pH
                                                                                                                                                                                                                                                                                                                                   Claim 4; Column 51-52; 63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-0CT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunoassay; heat-shock protein; cross reactive protein; detection
antigenic fragment; antibody; insulin-dependent diabetes mellitus;
cellulose; chitin; cellulolytic; amorphogenic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW90080 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellulovorans CBD-HSP fusion protein.
                                                                              N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GNSYVDNTSKVTANFVKETASPTSTYDTYLD
                                                                 SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL 61
             GNSYVDNTSKVTANFVKETASPTSTYDTYLD 92
GNSYVDNTSKVTANFVKETASPTSTYDTYVE
                                                   SVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALL
                                                                                                                                                                                                                                                                                                                                                               analyte
                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goldstein MA,
                                                                                                                                                                                     range and
                                                                                                                                                            156
                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94US-0330394.
93US-0048164.
94WO-US04132.
                                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RES & DEV CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94US-0330394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domain; CBD; CbpA; fusion protein; diagnosis; HSP, shock nrotein: cross reactive protein; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                     is not released from cellulose by washing with water
                                                                                                                   35.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shoseyov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                       Score 472; DE Pred. No. 3e-3
2; Mismatches
                                                                                                        <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ó
91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shpiegl
                                                                                                                   3e-38;
                                                                                                                                  DB
                                                                                                                                20;
                                                                                                       0;
                                                                                                                                Length 156
                                                                                                        Indels
                                                                                                     Gaps
                                                                                                                                                                                                                                                                                            a heat
                                                   60
                                                                                                                                                                                                   over
                                                                                                        0,
```

```
RESULT 15
AAR95080
                                                                                                                                                                                                                                                                                               g
                                         Qy
                                                                                            В
                                                                                                                                       Qγ
                                                                                                                                                                                           Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                                                                            A modified cellulose binding domain (CBD) or fraction of it, linked to a hapten moiety via one or more Cys or Lys residues and complexes comprising the biotinylated CBD and a biotin-binding molecule selected from modified or unmodified avidin or streptavidin or an anti-biotin antibody, can be used in affinity chromatography, cell separation, cell, protein and enzyme immobilisation, selective removal of biological materials, multienzyme reactors, signal immunoassays and drug (e.g. pesticide) delivery. The CBD molecule can be modified with the hapten without affecting its high affinity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cellulose binding domain; CBD; hapten; moiety; biotin; avistreptavidin; affinity chromatography; cell separation, cell immobilisation; protein immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; enzyme immobilisation; e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Modified cellulose-binding partic. biotin, to provide assays, reactors, delivery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TECR ) TECHNION RES & DEV FOUND LTD.
(UYRA-) UNIV RAMOT APPLIED RES & IND DEV
(YEDA ) YEDA RES & DEV CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clostridium thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cellulose binding domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR95080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR95080 standard;
                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1996-239453/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bayer EA, Lamed R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellulose; chitin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9613524-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                           61
83
                                                                                                                                             ب
                                                                                                                                                                                                                                                                                                                                             cellulose, or chitin.
                       LGN--SYVDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQ
                                                                                                                                             MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                            LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12; Page 34-35;
                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                               .167
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                               ĄĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94IL-0111415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95WO-US13813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
                                                                                                                                                                                                                  18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Morag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g domain mols. -
e an affinity sys
y etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ē
                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       167
                                                                                                                                                                                           Score 245; DB 1
Pred. No. 6e-16;
6; Mismatches
-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shoham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĭ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        having at stem for,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wilchek
                                                                                                                                                                                                                                      17;
                                                                                                                                                                                             30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    attached hapten,
                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e.g. sepns.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immobilisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  avidin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pesticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complexes
                                                                                                                                                                                             4.
                                                                                                                                                                                           Gaps
```

Search Job tim

completed: ne : 35.0449

October secs

27,

2002,

11:09:12

ω

time

THIS PAGE BLANK (USPTO)

```
Minimum DB
                                                                                                                                                                                                                             Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
815
303.5
258.5
252.5
251.5
251.5
249
249
236.5
233.5
233.5
233.5
233.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPTREMBL_19:*
1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-677-374-6
1335
1 MSVEFYNSNKSAQTNSITPI......IYGTACPQPDGRWQVISTEK 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 27, 2002, 10:56:01; Search time 28.7392 Seconds (without alignments) 1540.986 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562222 seqs, 172994929 residues
61.0
22.7
21.2
19.4
18.9
18.8
18.8
18.7
17.9
17.7
17.7
17.6
17.6
17.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                              sp_virus:*
sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                             sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_plant:*
                                                                                                                                                                                                                               Length
148
159
137
144
134
1546
151
151
151
131
131
131
131
1483
105
                                                                                                                                                                                                                               DB
            2 Q9F9K8
2 Q9F9F2
2 Q9F9F2
2 Q9E2F2
2 Q9K2N6
2 Q9K2N6
Q9K4W8
Q45996
Q45996
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
Q9F9Q1
 031208
                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    562222
         Q9f9k8 pisciricket
Q9f9k8 rickettsia
Q9f9f2 rickettsia
Q9f9f2 rickettsia
Q9k2n6 male-killin
Q9k2n6 male-killin
Q9k4w8 male-killin
Q45996 clostridium
Q53154 rickettsia
Q9f9q9 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
Q9f9q1 rickettsia
                                                                                                                                                                                                                            Description
 rickettsia
```

22222222222222222222222222222222222222	17 18 19 20 20 21 22 23
144.5 142.5 142.5 139.5 138.5 135.5 128.5 127.5 128.1 129.1 120.5 111.5 111.5 111.5	195.5 193 169.5 152.5 151.5 150.5 149.5
110.8 110.7 110.4 110.4 9.6 1.0 9.6 1.0 9.6 1.0 9.6 9.1 9.6 9.1 9.6 9.1 9.6 9.1 9.6 9.6 9.1 9.6 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1	14.5 14.5 12.7 11.4 11.3 11.3
1936 1000 11000 1701 771 921 1992 1170 1170 1170 1170 1170 1170 1170 117	1915 887 321 997 1779 1770 261 1426
222 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
09AQ04 09AQ04 09AG11 09AGC7 09L8L8 09E54 09FX5 09FX6 09FX6 09STJ6 093TJ6 093TJ6 093TJ6 093TJ6 093TJ6 093TJ6 093TJ6 093TJ6 093TJ6 095TB19 095TB19 09FB19	Q9RPL0 Q9L3J8 Q9L6392 Q9Z411 Q9Z471 Q9Z3P5 Q9X3P5 Q9X3P6 Q9X3P6
Q9aqho caldicellul Q9aqho caldicellul Q9aqho caldicellul Q9aqc7 rickettsia Q91818 caldibacill Q91818 caldibacill Q91616 caldibacill Q91616 caldibacill Q91616 caldibacill Q91766 caldibacill Q91766 caldibacill Q91766 caldibacill Q91761 bacillus su Q93180 bacillus su Q92789 rhizobium m Q93781 bacillus sp Q455731 bacillus sp Q455731 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp Q45532 bacillus sp	Q9rpl0 acetivibrio Q913j8 clostridium Q46392 clostridium Q46392 clostridium Q924i1 bacillus sp O52374 caldicellul Q9x3p5 caldicellul Q9x3p5 caldicellul Q9x3p6 caldicellul Q9x3p6 caldicellul

ALIGNMENTS

Qy 157 GGLIGSKIGQSMDQQDKIKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQER 216	Query Match Best Local Similarity 98.8%; Pred. No. 3.6e-59; Best Local Similarity 98.8%; Pred. No. 3.6e-59; Matches 158; Conservative 1; Mismatches 1; Indels 0; Gaps 0; Matches 158; Conservative 1; Mismatches 1; Indels 0; Gaps 0; Qy 97 RGCLQGSSLIIISVFLVGCAQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVL 156	RESULT 1 Q9F9K8 Q9F9K8 PRELIMINARY; AC Q9F9K8; DT 01-MAR-2001 (TrEMBLrel. 16, Created) DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update) DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update) DT 17 KDA ANTIGEN. GN OSPA. OS Piscirickettsia salmonis. OC Bacteria; Proteobacteria; gamma subdivision; Piscirickettsia group; OC Piscirickettsia.

Tue

```
RESULT
054381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
밁
                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O9F9F2

O9F9F2;
O9F9F2;
O1-MAR-2001 (TrEMBLrel. 16, Created)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence updat O1-DEC-2001 (TrEMBLrel. 19, Last annotation upd I7 KDA GENUS-COMMON ANTIGEN.
Rickettsia felis (Rickettsia azadi).
Rickettsia Fproteobacteria; alpha subdivision; Rickettsiaceae; Rickettsiae; Rickettsia.
                                                                                          Matches
                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-1998 (TrEMBLrel. 06, Creat. 01-JUN-1998 (TrEMBLrel. 06, Last. 01-NOV-1998 (TrEMBLrel. 08, Last. 17 KDA COMMON-ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE-98087555; PubMed-9425244;
Davis M.J., Ying Z., Brunner B.R., Pan
Paris Mickettsial relative associated with
"Rickettsial relative associated with
"Curr Microbiol. 36:80-84(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            054381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsiaceae;
NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; U76907; AAC02809.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDK----IK 175
                                                                                                                                                                                  sported fever group.":
Int. J. Syst. Evol. Microbiol. 51:339-347(2001)
EMBL; AF195118; AAG28452.1; -
SPOUENCE 159 AA; 16497 MW; 34C5B020AF470A1F
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-21217364; PubMed=11321078;

Bouyer D.H., Stenos J., Crocquet-Valdes P., Moron C.G., Popov V.L.,

Bouyer D.H., Stenos J., Foil L.D., Stothard D.R., Azad A.F.,

Zavala-Velazquez J.E., Foil L.D., Stothard D.R., Azad A.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132
                                                                                                                                                                                                                                                                               "Rickettsia felis: molecular characterization of a new member
                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=42862;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77
                                               103
                                                                                                                 Local
  ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGOKQ 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NKQGSGTLIGGTLGGLVGSQFGGGTGRLAAVGAGALLGAILGNQIGAGMDEQDRKLAELT 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQRALEAAPSGSSVQWRNPDNGNYGTVTPSKAY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EIYGTACPQPDGRWQVI 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KAYGTACROPDGQWQVV
SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL 63
                                          SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
55; Conserv
                                                                                             l Similarity
61; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             148 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15050 MW; A7AFEEFDE0AEEE4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22.7%;
                                                                                                                        21.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06, Created)
06, Last sequence update)
08, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 303.5; DB 2;
pred. No. 2.2e-17;
                                                                                                       30;
                                                                                                                           Score 283; DB 2
Pred. No. 1.1e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                 34C5B020AF470A1F CRC64;
                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pantoja
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ntoja A.,
1 papaya bu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - | | | | | | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the bunchy top
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsiales;
                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F.H.;
disease.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                   16;
                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                        6
```

4

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
        ACCOMPAND TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05252;
01-JUN-1998 (TrEMBLrel. 06,
01-JUN-1998 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
17 KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Billings A.N., Teltow G.J., Walker D.H.;
"Molecular characterization of a novel spotted fever graph species from Ixodes scapularis in Texas.";
submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases EMBL; AF031534; AAB95267.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          052252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia cooleyi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=69410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                          09K2N6;
01-0CT-2000 (TrEMBLrel. 15, Careated)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
17KDA ANTIGEN (17 KDA ANTIGEN) (FRAGMENT).
male-killing Rickettsia from Adalia bipunctata.
male-killing Rickettsia; alpha subdivision; Ricket
materia; proteobacteria; alpha subdivision; Ricket
materia; proteobacteria; alpha subdivision; Ricket
SEQUENCE FROM N.A.
SCOLLENBURG H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,
Schulenburg H.J.G.V.D., Majerus M.E.N.;
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
On the evolution of male-killing: Monophyletic origin and horizo
"On the evolution of male-killing: Monophyletic origin and horizo
generic ladybirds, Adalia bipunctata L. and A. decempunctata L.
Geneptera: Coccinellidae).";
(Coleoptera: Coccinellidae).";
Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
Submitted (APR-2000) to the EMBL/GenBank/DDBJ databases.
SMBL; AJ269518; CAB96383.1; -.
EMBL; AJ269517; CAB96383.1; -.
EMBL; AJ269517; CAB96383.1; -.
EMBL; AJ269517; CAB96383.1; -.
EMBL; AJ269517; CAB96383.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9K2N6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=38028;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ហ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGLIGSKIGOSMDOODK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYOKYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAVLGGQIGAGNDEODRRLAELTSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGLWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KOERROQYCREFQQKAMIAGQKQETYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABLTSQRALEAAPSGSSTEWRNPDNGNYGYVTPNKTY----RNSTGQYCREYTQTVVIG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQOYCREFQOKAMIA 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GKQQKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GQKQEIYGTACPQPD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14215 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 258.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A27597A9AFD85FC3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No. 9.4e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    253
                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        group rickettsial
                                                                                                                                                                                                                                                 and horizontal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                             con-
```

4

Length Indels

144;

nī

11;

Gaps

4

75

```
RESULT
Q9K4W8
ID Q9
AC Q9
DT 00
DT 00
                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                          Š
                                                                                                                                                   밁
                                                                                                                                                                        Ş
                                                                                                                                                                                                밁
                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                Matches
 Q9K4W8;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 031065; Q9WW02;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
                                                                                                                                                                                                                                                                                                                            spotted fever in Australia ";
Int. J. Syst. Bacteriol. 48:1399-1404(1998).
EMBL; AF027124; AAB81846.1; -
EMBL; AF060706; AAD20231.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                    Billings A.N., Yu X.-J., Submitted (SEP-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. STRAIN-TT-118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia. NCBI_TaxID=37816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                               Q9K4W8
                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                          Stenos J., Roux V., Walker D., Raoult D.; "Rickettsia honei sp. nov., the aetiological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia honei.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      031065
                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=99045882; PubMed=9828442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175
                                                                                                        124
                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EQUENCE FROM N.A.
                                                                                                                                                                                                                       120 SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                     69
                                                                                                                                                                                                  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KDA ANTIGEN (17 KDA PROTEIN)
                                                                                                        QKAYGNACRQPD 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QEIYGTACPQPD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QKAYGNACRQPD 142
                                                                                                                              QEIYGTACPQPD
                                                                                                                                                                 TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ 130
                                                                                                                                                     TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY - - - -
                                                                                                                                                                                                                                                                                                                  AF060704; AAD20230.1; -.
                                                                                                                                                                                                                                              Similarity
52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 39.4
52; Conservative
                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144
 (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                            Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð,
                                                                                                                              246
                                                                                                                                                                                                                                                                                            14167 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.9%;
                                                                                                                                                                                                                                                           18:8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                     the
 15,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                    Teel P.D., Walker D.H.;
the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24;
                                                                                                                                                                                                                                                24;
                                                                                                                                                                                                                                             Score 251.5;
Pred. No. 3.5e
24; Mismatches
Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 252.5; DB 2;
Pred. No. 3.1e-13;
4; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                               PRT;
                                                                                                                                                                                                                                                                                            75BC1D0D745B428C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C8254739CCA56AE7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                               144
                                                                                                                                                                                                                                                       .5e-13;
                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                     -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                             agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsiales;
                                                                                                                                                                                                                                                45;
                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 144;
                                                                                                                                                                                                                                                                    Length 137;
                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                             of Flinders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                             Island
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                               SEQUENCE FROM N.A.
STRAIN=ATCC 35319;
MEDLINE=99173902; Pubm.
Pages S., Belaich A., 1
                                                                                                                                                                                                                                                                                                                                         01-NOV-1996
01-MAR-2001
01-JUN-2001
SCAFFOLDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appl. Er
EMBL; AJ
NON_TER
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE-20575219; PubMed-11133455;
MEDLINE-20575219; PubMed-11133455;
Schulenburg H.J.G.V.D., Habig M., Sloggett J.J., Webberley M.K.,
Bertrand D., Hurst G.D.D., Majerus M.E.N.;
"Incidence of male-killing Rickettsia spp. (alpha-Proteobacteria)
"Incidence of male-killing Rickettsia decempunctata L. (Coleoptera:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                male-killing Rickettsia from Adalia decempunctata. Bacteria: Proteobacteria; alpha subdivision; Ricke Rickettsiaceae; Rickettsiaceae; Rickettsia. NCBI_TaxID=120393;
                                            "Sequence analysis of scaffolding protein CipC and ORFXp, cohesin containing protein in Clostridium cellulolyticum: of various cohesin domains and subcellular localization of J. Bacteriol. 181:1801-1810(1999).
                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN-ATCC 35319;
MEDLINE-96218696; PubMed-8636029;
Pages S., Belaich A., Tardif C.,
                                                                                                                                                                                                                                                                                           Clostridium cellulolyticum Bacteria; Firmicutes; Baci Clostridium.
                                                                                                                                                                        Pages S., Belaich A., Tardif C., Reverbel-Leroy C., Gaudin C. Belaich J.P.;
"Interaction between the endoglucanase CelA and the scaffoldiprotein CipC of the Clostridium cellulolyticum cellulosome.";
J. Bacteriol. 178:2279-2286(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 KDA ANTIGEN (FRAGMENT) male-killing Rickettsia fr
 Reverbel-Leroy C., Belaich J.;
                       SEQUENCE FROM N.A. STRAIN-ATCC 35319;
                                                                                                                                                                                                                                                                                                                                                                                      Q45996;
                                                                                                                                                                                                                                                                                                                                                                                                    Q45996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Coccinellidae)."
                                                                                                                                                                                                                                                                               NCBI_TaxID=1521;
                                                                                                        Belaich J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175 KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
::|| :| | || || || || || :|| :| || :||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity hes 52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                             QKSYGNACROPD 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QEIYGTACPQPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AJ269516; CAB96381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Environ. Microbiol. 67:270-277(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144 AA;
                                                                                                                                                                                                                                                                                                                                       (TremBLrel. 01, Created)
(TremBLrel. 16, Last sequence update)
(TremBLrel. 17, Last annotation updat
PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                PubMed=10074072;
A., Fierobe H.P.,
             Tardif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14801 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.8%;
                                                                                                                                                                                                                                                                                                       Bacillus/Clostridium
            C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 251.5;
            Belaich A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C825472F16A56AE7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NO.
                                                                                                                   Tardif C.,
                                                                                                                                                                                                                                                                                                                                                                                                    1546
                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .7e-13
            Bernadac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                      group;
                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                   Gaudin
```

the scaffolding

Α.,

Gaudin

0

of ORFXp.";

comparison

Clostridiaceae;

```
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                 δÃ
                                                        Query Match
Best Local S
Matches 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        Q53154
Q53154;
Q53154;
Q53154;
Q1-NOV-1996 (TremBirel. 01, Credit of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (OCT-2000) to the EMBL; U40345; AAC28899.2; -. HSSP; Q06851; INEC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Molecular study and overexpression of the Clostridium cellulolyticum celCCF cellulase gene in Escherichia coli.";
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
[4]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pages S., Bel
Belaich J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN-ATCC 35319;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00942; CBD_3; 1.
Pfam; PF00963; Cohesin; 8.
ProDom; PD001947; CBD_3; 1.
PROSITE; PS00012; PHOSPHOPANTETHEINE; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001956; CBD_3
InterPro; IPR002102; Cohes
InterPro; IPR003880; Phosp
                                                                                                                                                                             Baird R.W., Lloyd M., Stenos J., 
"Characterization and comparison 
group rickettsiae.";
J. Clin. Microbiol. 30:2896-2902
EMBL, M99391; AAA73386.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria;
Rickettsiaceae; Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ignal.
                                                                                                                                          SEQUENCE
                                                                                                                                                              NON_TER
                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=93084757; PubMed=1452660;
                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152
                     103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ^{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTGGGTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGNSYVDNTSKVTANFVKETASPTSTYDTYLD---PSHMRGCLQGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGSNYIDATSKYTGSF-KAVSPAVTNADHYLEVALNSDAGSLPAGGSIEIQTRFARNDWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VSVQFNNGSSPASSNSIYARFKVTNTSGSPINLADLKLRYYYTQDADKPLTFWCDHAGYM
SSLIIISV---FLYGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -TINPTSISAKAGSFADTKITLTPNGNTFNGIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IKLNQSLEKVKAG-----QVTRWRNPDTGNSYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NFDQSNDWSYTAA------GSYMDWQKISAFVGGTLAYG--STPDGGNPPPQDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
72; Conserv
                                                          55;
                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Belaich A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28 15
1546 AA;
                                                                                                                                             154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                            Conservative
                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                    obacteria; alpha subdivision;
Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27
                                                                                                                                                                                                       30:2896-2902(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18.7%;
                                                                                                                                               15849 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Phosphopant_attach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cohesin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158748
                                                                                18.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Reverbel C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32;
                                                                                                                                                                                                                                                                                                                                                                                                                                , Last sequence update) Last annotation updat CDS (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCAFFOLDING PROTEIN. MW; F8651504EC27809F
                                                              31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 249;
Pred. No. 1
                                                            Score 244; DB 2
Pred. No. 1.7e-1
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                             F5C35855EDB439D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                              Ross B.C., Stewart F
of Australian human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tardif C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
.3e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑA
                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                      Stewart R.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81;
                                                                 54;
                                                                                                                                                                                                                                                                                                                                                                                                Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fierobe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1546;
                                                                                                      Length 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                 Indels
                                                                                                                                                                                                                                                     spotted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            H.P.,
                                                                                                                                                                                                                                                                      Dwyer B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaudin
                                                                                                                                                                                                                                                       fever
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
                                                                     6
```

```
RESULT 10
Q9F9Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ID ACCOMENDATION OF THE REPRESENTATION OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
Q9F0Q1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                        Q9F0Q1;
Q9F0Q1;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9F9Q9 PRELIMINARY; PRT; Q9F9Q9; 01-MAR-2001 (TrEMBLrel. 16, Create 01-MAR-2001 (TrEMBLrel. 16, Last solder, MEMBRANE PROTEIN (FRAGMENT).
                                                                                                                                                                                                                        Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsiaceae; Rickettsia. NCBL_TaxID-147259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL: AF181036; AAG09427.1;
NON_TER 151 151
SEQUENCE 151 AA; 15621 MV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; alpha subdivision;
Rickettsiaceae; Rickettsieae; Rickettsia.
NCBI_TaxID=35789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (AUG-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rickettsiosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
Nilsson K., Pahlson C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia helvetica.
                                                                                                                                                                                                                                                                                                        01-MAR-2001 (TrEMBLrel. 16
01-MAR-2001 (TrEMBLrel. 16
17 KDA PROTEIN (FRAGMENT).
Rickettsia sp. California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Novel peptide diagnostic reagent and kit for
                    SEQUENCE FROM N.A. STRAIN=CALIFORNIA 2; Roux V., Raoult D.;
                                                                                                         Submitted
                                                                                                                                                                       STRAIN-CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157
    Submitted
                                                                                                         "A new SFG rickettsia isolated from fleas."; Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
                                                                                                                                                     Raoult D.;
                                                                                                                                                                                                 SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KOERROOYCREFQQKAMIAGQKQEIYGTACPQPDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GQD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGSYGYVTPNKTYRNST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KQERRQQYCREFQQKAMIAGQKQEIYGTACPQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
Raoult D.;
1 (DEC-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                               (TremBLrel. 16, Created)
(TremBLrel. 16, Last seq
(TremBLrel. 16, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -CRVYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15621 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.9%;
    ţ
    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 239;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B77407B9C71E4B39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                    sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                             131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.2e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     detection
           databases
                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119
```

6

```
RESULT
Q9L522
ID Q5
AC Q5
DT 00
DT 0
DT 1
OS R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QS2637
ID QS2637
ID QS2637
AC QS5637
                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFT
                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; U(
O9L522 PRELIMINARY; PRT; 131 AA.
09L522; O1-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
17 KDA SURFACE ANTIGEN (FRAGMENT).
Rickettsia peacockii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    beetle (Adalia bipunctata).";
J. Bacteriol. 176:388-394(1994).
EMBL; U04162; AAA19235.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-94117373; PubMed-8288533; MEDLINE-94117373; PubMed-8288533; MEDLINE-94117373; PubMed-8288533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsiaceae;
NCBI_TaxID=789;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TREMBLIEG: 01, 01-NOV-1996 (TREMBLIEG: 08, 01-NOV-1998 (TREMBLIEG: 08,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q52637;
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Majerus M.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsia sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q52637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Rickettsial relative associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124 QKAYGNAC 131
                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                   120 SRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KDA ANTIGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                QKAYGNAC
                                                                                                                                                                                                                                                                                                                                                          KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QEIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSQRALEATPSGTSVEWRNPDNGNHGYVTPNKTY-----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                          QEIYGTAC
                                                                                                                                                                                                                                                                                                                                     TSQRALEAAPSGSNVEWRNPDNGNHGYVTPNKTY----RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                            NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF210693;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 Similarity
49; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
49; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAG48554.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13344 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13374 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17.7%;
38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 236.5; |
Pred. No. 5.6e
24; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 236.5; DB 2
Pred. No. 5.6e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlDCF71050DF52DF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23C8819B29FFF860 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Breeuwer J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    killing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stouthamer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ladybird
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
```

```
RESULT OR 2830 OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR CO OR 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                               Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1998
01-JUN-2001
SCAFFOLDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-21091941; PubMed-11157215; Simser J.A., Palmer A.T., Munderloh U.G., Kurtti T.J.; Simser J.A., Palmer A.T., Munderloh U.G., Kurtti T.J.; "Isolation of a spotted fever group rickettsia, Rickettsia in a Rocky Mountain wood tick, Dermacentor andersoni, cell Appl. Environ. Microbiol. 67:546-552(2001).

BMBL; AF260571; AAF69012.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clostridium josui.
Bacteria; Firmicutes;
Clostridium.
                                                                                                                                       Pfam; Prouded, Comp. 3; 1.
Probom; PD001947; CBD_3; 1.
PROSITE; PS00012; PHOSPHOPANTETHEINE; UNKNOWN_5.
PROSITE; PS00012; PHOSPHOPANTETHEINE; UNKNOWN_5.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Kakiuchi M., Isui A., Suzuki K., Fujino T., Fujino E., Kimura Karita S., Sakka K., Ohmiya K.;
"Cloning and DNA sequencing of the genes encoding Clostridium scaffolding protein CipA and cellulase Celb and identification."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                          Pfam; PF00942; CBD_3; 1. Pfam; PF00963; Cohesin; 6.
                                                                                                                                                                                                                                                                                                                                            EMBL; AB004845; BAA32429.1; HSSP; Q06851; INBC.
                                                                                                                                                                                                                                                                                                                                                                                          their gene products as major components of the J. Bacteriol. 180:4303-4308(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=98361925; PubMed=9696784;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      082830;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          082830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=47589;
                                                                                                                                                                                                                                                                   InterPro; IPR001956; CBD_3.
InterPro; IPR002102; Cohesin
InterPro; IPR00380; Phosphop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=1499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 NKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALLGAVLGGQIGAGMDEQDRRLAEL
1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QKAYGNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QEIYGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. (TrEMBLrel. PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13413 MW;
                                                                                17.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17.6%;
38.3%;
                                                                                                                                                                                                                                                  Phosphopant_attach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08,
08,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 6.70
4; Mismatches
                                                            Score 233.5; DB 2;
Pred. No. 1.6e-10;
1; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 235.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        228C020550CAA9D0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. 6.7e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                     cellulosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                 Indels
                                                                                                          Length
                                                                                                               1162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peacockii,
line.";
                                                                 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
.
                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                               7;
```

В

33 ISVQFNNGSSPTSSSSIYARFKVTNTSGSPINLADLKLRYYFTQDENKQMTFWCDHAGYL

92

```
RESULT 15
Q977Y4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RP SEQUENCE FROM N.A.

RS SEQUENCE FROM N.A.

RC STRAIN—ATCC 824 / DSM 792 / VKM B-1787;

RC MEDLINE-21359325; PubMed=11466286;

RX MEDLINE-21359325; PubMed=11466286;

RA Moelling J., Breton G., Omelchenko M.V., Makarova K.S., Zeng Q.,

RA Gibson R., Lee H.M., Dubois J., Qiu D., Hitti J., Wolf Y.I.,

RA Gibson R., Lee H.M., Dubois J., Qiu D., Hitti J., Wolf Y.I.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Koonin E.V., Smith D.R.;

RA Bennett G.N., Koonin E.V., Smith D.R.;

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Daly M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Daly M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Daly M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Daly M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe F., Daly M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe M.J., Sabathe M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe M.J., Sabathe M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Sabathe M.J., Sabathe M.J., Soucaille P., Daly M.J.,

RA Tatusov R.L., Saba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      рь
                                                                                                                                                              Вþ
                                                                                                                                                                                                                            δã
                                                                                                                                                                                                                                                                                                                망
Search completed: October 27, 2002, 10:59:56 Job time: 31.7392 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 16.7%; Score 223.5; DB 16; Length Best Local Similarity 28.4%; pred. No. 1.5e-09; Matches 57; Conservative 22; Mismatches 49; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q977Y4
Q977Y4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2001 (TremBLrel. 18, Created)
01-OCT-2001 (TremBLrel. 18, Last sequence update)
01-DCC-2001 (TremBLrel. 19, Last annotation update)
01-DEC-2001 (TremBLrel. 19, Last annotation update)
PROBABLY CELLUICOSOMAL SCAFFOLDING PROTEIN, SECRETED,
CELLUICOSE-BINDING AND COHESIN DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clostridium acetobutylicum.
Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAC0910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198 -KISPTSISAKQGQ 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    174 IKLNOSLEKVKAGO 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMATGGAVLGGLIGSKIGQSMDQQDK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=1488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Complete proteome. SEQUENCE 1483 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93
                                                                                                                                                              154
                                                                                                                                                                                                                                     181 EKVKAGQVTRWRNPDTGNSYS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SGNNYMDVTSKVSGTF-NEVSPAVTNADHYLEVALSSDAGSLPAGGSIEIQTRFARNDWS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NFDQSNDWSYTSA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LONSYVDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RQEVGAATGAVVGGVAGQLEGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NGYNYQTITSNVVGTFV-AMDNATATADHYLEISFSNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                          ----WSNYDQSNDYS
                                                                                                                                                                                                                                                                                                                                     -AGQL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154444 MW; A74808E396AA9807 CRC64;
                                                                                                                                                                               164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GSYMDWQKIAAFVGGTLVYG--STPNGDDNPTQDP 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT; 1483 AA
                                                                                                                                                                                                                                                                                                                                             --DAGSSLEVQCRVAKND--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 ;
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
            Pred. No. 1s the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB DB
         487
286
286
276
276
259
259
259
259
255
245
245
245
188.5
188.5
188.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
113.5
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-677-374-6
1335
1 MSVEFYNSNKSAQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 27, 2002, 10:55:57; Search time 9.28497 Seconds (without alignments) 1067.553 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105224 seqs, 38719550 residues
         SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen
         Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
    CBPA_CLOCL
17KD_RICQR
17KD_RICQR
17KD_RICQR
17KD_RICQR
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
17KD_RICGN
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
17KD_RICGN
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR
GUNL_CLOSR

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105224
p38058 clostridium p16624 rickettsia Q52764 rickettsia p25764 rickettsia p25872 rickettsia p250928 rickettsia p50928 rickettsia p50929 rickettsia p50929 rickettsia p50927 rickettsia p50927 rickettsia p50927 rickettsia p50927 rickettsia p50927 rickettsia p50927 rickettsia p50929 clostridium p206851 clostridium p23659 clostridium p23659 rickettsia p10474 c endogluca p22534 caldocellum p20534 bacillus su p31484 yersinia en p29718 paenibacillus su p31484 yersinia en p23549 salmonella p55741 escherichia car p10325 haemophilus q53549 salmonella p55741 escherichia car p10325 haemophilus q47096 erwinia car p29719 paenibacill p37796 escherichia Q59394 erwinia car Q52995 chlamydia p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
       QY
```

Db Oy		OR OR OR OR OR OR OR OR OR OR OR OR OR O	688888888888	C R R R R R R R R R R R R R R R R R R R	R C C C C C C C C C C C C C C C C C C C	RES CBI	
σ ω	Query M Best Lo Matches	PIH HSSS Int Int Pfa Pfa CGL COM COM COM	Thi bet the use mod ent	SEQ MEDD Sho Sho Pro	01- 01- 01- Cel CBP Clo	SULT 1 PARCEO	33 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
3 MSVEF	atch cal Si 116;	EMBL; M73817; AAA23318 PIR; A44140; A44140. HSSP; Q06851; INBC. InterPro; IPR001956; C InterPro; IPR002102; C Pfam; PF00942; CBD_3; Pfam; PF00963; Cohesin ProDom; PD001947; CBD_ Cellulose degradation; SIGNAL 1 28 CHAIN 29 1848 DOMAIN 29 189 SEQUENCE 1848 AA; 1	PTM: THE N-TERMINUS -!- PTM: CONTAINS ABOUT This SWISS-PROT entry i between the Swiss Inst the European Bioinforma use by non-profit in modified and this state entities requires a lic or send an email to lic	EQUENCE FROM N EDLINE=9222881 hoseyov O., Tal primary sequen inding protein roc. Natl. Acaa 1- FUNCTION: B	Ol-OCT-1994 (Ol-OCT-1994 (Ol-OCT-1998 (15-DEC-1998 (Cellulose bin CBPA. Clostridium c Bacteria; Fir Clostridium. NCBI_TaxID=14	1 LOCL BPA_CLOCL	97.5 95.5 90.990 90.990 90.990 86.55 86.55 86.66 86.66
IS R	larit Conse	3817; AAA2 140; A4414 140; A4415; 1980; 1980; 19800210 00942; CBD 00963; CBD 00963; CBD 00963; CBD 00963; CBD 00963; CBD 00963; CBD 00963; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD 00964; ABD	THE N-TERMII THE N-TERMII CONTAINS AB CONTAINS AB ISS-PROT entry the Swiss II Opean Bioinfo non-profit d and this st s requires a an email to	FROM N.A. 12228810; O., Takag Sequence rotein A. 1. Acad.	(Rel. 30 (Rel. 31 (Rel. 37 Rel. 37 Rel. 37 Rellulov rirmicutes n. 1493;	ST	000000000077
	36.5 y 46.8 rvative	AAA23218.1; AA44140. INBC. 001956; CBD_3 002102; Cohes; CBD_3; 1. ; Cohesin; 9. 947; CBD_3; 1 1 28 1 1 28 1 189 29 1848 29 189 48 AA; 18915	NTAINS ABOUT 10% OF CARBOHYL NTAINS ABOUT 10% OF CARBOHYL PROT entry is copyright. It ne Swiss Institute of Bioinfo nn Bioinformatics Institute. nn-profit institutions as It od this statement is not rem aguires a license@isb-sib.ch.	PubMedi M., i M., analys), Cre), Las), Las), Las votein vorans s; Bac	TANDARD;	541 1585 526 1161 1332 378 1077 1061 72 1396 3770 526
IKITNTS	8; Scc 8; Pre 12;	3. ssin. 1. 1. wall POT CEL CEL CEL	NUS IS BLOCKE OUT 10% OF CA y is copyrigh nstitute of B rmatics Insti institutions atement is no license agree licenseelsb-s	H=1565642 Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldstein Goldst	ated) it sequence it annotati A precurs i. itillus/Clos	PR Å	1 YQBO 1 K1CJ 1 DAN4 1 XKDO 1 SLG1 1 HLES 1 OAR 1 OAR 1 OAR 1 VLTF 1 ACVS 1 VP5
DSDLNLA	Score 487; DB Pred. No. 6.4e-2; Mismatches	Re RE ULO ULO	CARBOHYDRATI	2; in M.A., lostridi 9:3483-3	et r	LIGNMEN	NU57_YEAST YQBO_BACSU K1CJ_BOVIN LOAN4_YEAST XKDO_BACSU SLG1_YEAST HLES_DROME OAR_MYXAA OSMB_SALTY VLTF_BPT5 ACVS_EMENI VP5_BTV11
	DB 1; 6.4e-32; hes 3	;; Si 3INDI 3INDI 26F77	HYDRATES. It is production formatics at the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the production of the pro	Doil um ci 487(pdate) update) idium group;	ITS	
SS	Length 0; Inde	al; Glyco; PROTEIN; GBY SIMI	ed tand and e no s co	R.H.; ellulovoran 1992). COORDINATE			
DGTQGQTFWCDHAGA	ch 1848; lels 9	prot A. LARI	oug oug res res ent	S S	Clostridiaceae		P48837 P45931 P06394 P47179 P47179 P54334 P548370 Q02308 P38370 P37723 P13390 P27742 P33476
FS AL	Ga	n .	b. Set Cet	ellulose ELLULASE	ceae;		
92 120	ps 7		ollaboration outstation its ions on its in no way roommercial ch/announce/				saccharomyc bacillus su bos taurus saccharomyc bacillus su bacillus su saccharomyc drosophila myxococcus salmonella bacteriopha emericella bluetongue
	.7	i	is on				

```
RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ul-AUG-1990 (Rel. 15, Created)
01-AUG-1991 (Rel. 19, Last sequenc
16-OCT-2001 (Rel. 40, Last annotat
17 kDa surface antigen precursor.
OMP OR RP833.
                                     Query Match
Best Local S
                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17KD_RICPR
P16624;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene.
J. Ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=MADRID E;
MEDLINE=89359171; PubMed=2768201;
Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of
                                                                                                                                                                                                                                                                                                                             mitochondria.";
Nature 396:133-140(1998)
                                                                                                                                                                                                                                                                                                                                                   Andersson S.G.E., Zomorodipour A., Andersson J.O., Sicheritz-Ponten T., Alsmark U.C.M., Podowski R.M., Naeslund A.K. Eriksson A.-S., Winkler H.H., Kurland C.G.; "The genome sequence of Rickettsia prowazekii and the origin of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; alpha subdivision; Rickettsiales;
Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia prowazekii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-MADRID
                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            186
                                                                                                                                                                                                  use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no restrained to the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=99039499; PubMed=9823893;
                                                                                                                                                                          EMBL; M28482; AAA26378.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93
                                                                           SEQUENCE
                                                                                                                 SIGNAL
                                                                                                                            Outer membrane; Lipoprotein;
                                                                                                                                         PROSITE;
                                                                                                                                                      PIR; D33971;
                                                                                                                                                                EMBL; AJ235273; CAA15258.1;
 103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LGNSYVDNTSKVTANFVKETASPTSTYDTYVE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EKVKAGQVTR--WRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   {\tt RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTA-PGPD 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----GRITKSDWSNYTQTNDYSFDASSSTPVVNP-----
                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTACPOPD
                                                                                                                                                                                                                                                                                                    anchor (Probable).
                          l Similarity
61; Conserv
                                                                                                                                           PS00013;
                                                                            20
20
159 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246
                             Conservative
                                                                                                                                                        D33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                            PROKAR_LIPOPROTEIN;
                                                                                                       159
                                                                              20 N
16672 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence up
                                          21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FGFASGRATL
                               32;
                                                                                                                               OPROTEIN; 1.
Antigen; Signal; Complete
                                                                              17 KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE)
, A33D404B65EEB071 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                               pred. No. 7.2
2; Mismatches
                                           Score 288;
Pred. No. 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                              There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                             DB 1;
.2e-17
                                   52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KKGQFITIQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rickettsial
                                                       Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -KVTGYIGGAK--VL 185
                                   Indels
                                                                                                                                                                                                                                                            restrictions on
                                                                                                                                    proteome.
                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                              a collaboration -
MBL outstation -
                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
                                      Gaps
                                      6;
```

ţ

```
Qy
                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
17KD_RICJA
RESULT 4
17KD_RICCN
ID 17KD_RICCN
AC P05372;
                                                                                                                                                                            δÃ
                                                                                                            Вb
                                                                                                                                 Qy
                                                                                                                                                        В
                                                                                   Q
                                                                д
                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation between Bioinformatics Institute. There are no restrictions on its the By non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q52764;
                                                                                                                                                                                                                                                                                                                                                                                                                                       specimens by PCR.";
J. Clin. Microbiol. 33:487-489(1995).
-i- SUBCELLULAR LOCATION: Attached to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiaceae; R
NCBI_TaxID=35790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rickettsia japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-95229950; PubMed-7714214;
Furnya Y., Katayama T., Yoshida Y., Kaiho
"Specific amplification of Rickettsia japo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17KD_RICJA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     213
                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                            Outer membrane;
                                                                                                                                                                                                                                                                                                      PROSITE
                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                           LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                            103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                   157
                                                                 120
                                                                                       213
                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGLIGSKIGOSMDOODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                                                                                                                                                               anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN
                                                                                                                                                        GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                 GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                - RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN 159
                                                                                      KOERROOYCREFOOKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                 D16515; BAA03965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   surface antigen precursor.
                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                            mbrane; Lipoprotein; Antigen; Signal.

1 19 BY SIMILARITY.

20 159 17 KDA SURFACE ANTIGEN.

20 20 N-ACYL DIGLYCERIDE (PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                   159 AA;
                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsieae;
             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35, Created)
35, Last sequence up
35, Last annotation
                                                                                                                                                                                                                                                    16554 MW;
                                                                                                                                                                                                                  21.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                         32;
                                                                                                                                                                                                                      Score 286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                         Pred. No. 1.16
2; Mismatches
                                                                                                                                                                                                                                                    CDDCE7CEBDCD6B41
               PRT;
                                                                                                                                                                                                                     No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              japonica
                159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA
                                                                                                                                                                                                                     DB 1;
.1e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Η.;
                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                      E (PROBABLE).
1 CRC64;
                                                                                                                                                                                                                              Length 159;
                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clinical
                                                                                                                                                                                                                                                                                                                                                                                                                                                γd
                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  D
                                                                                                                                                                                                                                                                                                                                                                                                                                                  lipid
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                             212
                                                                                                                                                                  63
                                                                                                                                                                                                               6;
```

```
EMBL; M28479; AAA26379.1; -.
EMBL; M28480; AAA26376.1; -.
EMBL; AE008675; AAL03825.1;
EMBL; M16486; AAA26381.1; -.
EMBL; J03371; -; NOT_ANNOTATEL
PIR, A25972; A25972.
PIR; A31836; A31836.
PIR; A33971; B33971.
PRR; B33971; B33971.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1988
01-AUG-1990
01-MAR-2002
17 kDa surfac
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17 kDa surface antigen precursor OMP OR RC1287.
Rickettsia conorii, and Rickettsia rickettsii.
Bacteria; Proteobacteria; alpha
                                     CHAIN
LIPID
                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                          modification.";
J. Bacteriol. 170:4493-4500(1988)
                                                                                                                                                                                                                                                                                                                                                                                Anderson B.E., Baumstark B.R., Bellini W.J.; "Expression of the gene encoding the 17-kilodalton Rickettsia rickettsii: transcription and posttrans
                                                                                                                                                                                                                                                                                                                                                                                                                   SPECIES=R.ricketts11;
MEDLINE=89008059; PubMed=3139629;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPECIES-R.rickettsil;
MEDLINE-87222152; PubMed-3108232;
Anderson B.E., Regnery R.L., Carlone G.M.,
Fu Z.Y., Bellini W.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPECIES=R.conorii; STRAIN=Malish 7
MEDLINE=21442074; pubMed=11557893;
Ogata H., Audic S., Renesto-audiff
Samson D., Roux V., Cossart P., We
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPECIES=R.conorii, and R.rickettsii; MEDLINE=89359171; PubMed=2768201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1-30 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Anderson B.E., Tzianabos T 
"Comparative sequence anal gene.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiaceae;
NCBI_TaxID=781,
                                                                          Outer membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Sequence analysis of the 17-kilodalton-antigen ricketts11.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Raoult
                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Mechanisms of evolution in Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteriol. 171:5199-5201(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteriol. 169:2385-2390(1987).
                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: Attached to the outer membrane by a lipid anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       293:2093-2098(2001).
                                                                                       PS00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1
20
20
146
153
          Lipoprotein;
1 19
1 159
0 159
0 20
6 146
146
 Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          783;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsieae;
                                                                                                                                                 NOT_ANNOTATED_CDS
                                                                        PROKAR_LIPOPROTEIN;
ipoprotein; Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Renesto-Audiffren P., Fourn
Cossart P., Weissenbach J.,
 16581 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               analysis of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha subdivision;
eae; Rickettsia.
          17 KDA SURFACE ANTIGEN.
N-ACYL IN REF. 3).
G -> E (IN REF. 3).
 206A2BBF74FCE169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genus-common

    Complete proteome

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conorii
                                                                                                                                                                                                                                                                                                                                                                               K110dalton antigen posttranslational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fournier P.-E., ch J., Claverie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tzianabos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ŧ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prowazekii.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McDade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J.-M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Barbe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antigen
```

```
RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                   δÃ
                                              В
                                                                    δ
                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
밁
                                                                                             밁
                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                              Matches
                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P22882;
01-AUG-1991 (Rel. 1
01-AUG-1991 (Rel. 1
01-CCT-1996 (Rel. 3
17 kDa surface anti
                                                                                                                                                                                                                                                                                                          entities
or send a
                                                                                                                                                                                                           SIGNAL
CHAIN
LIPID
                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                   Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                   gene.";
J. Bacteriol. 171:5199-5201(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-89359171; PubMed-2768201;
Anderson B.E., Tzianabos T.;
"Comparative sequence analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
NCBI_TaxID=785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OMP
                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rickettsia typhi.
                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L7KD_RICTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                       235
                                                                                                          157
                                               86
                                                                                               27
                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ű
                                                                                                                                                                                                                                                                                                                                                                                                         anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Attached to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                             NKQGTGTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQIGASLDEQDRKLLEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
QTTYGNACRQPDGQWQVVN
                     QEIYGTACPOPDGRWQVIS
                                               TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY - -
                                                                     KLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SKIMITALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                 M28481; AAA26377.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 surface antigen precursor
                                                                                                                                                                                                                                                                                                          s requires a license agreement (S an email to license@isb-sib.ch).
                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                           PS00013;
                                                                                                                                                                                               159 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                      C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19, Created)
19, Last sequence update)
34, Last annotation updat
                                                                                                                                                                                                                                                         PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                      159
                                                                                                                                                                                              20 N-ACYL DIGLYCERIDE (PROBABLE) 16549 MW; 08973E2648FD8CD8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21.3%;
                                                                                                                                                          20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           analysis of a
                        253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha subdivision; Rickettsiales; eae; Rickettsia.
                                                                                                                                              27;
                                                                                                                                                        Score 276.5;
Pred. No. 6.
                                                                                                                                                                                                                                             OPROTEIN; 1.
Antigen; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 285; DB 1;
Pred. No. 1.3e-16;
                                                                                                                                                                                                                     17 KDA SURFACE ANTIGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                              Mismatches
                                                                                                                                                          No. 6.3e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159
                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ã
                                                                                                                                                                       DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                       outer membrane
                                              RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                       ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                          rickettsial antigen
                                                                                                                                                                     Length
                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                               no restrictions content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                     159;
                                                                                                                                                                                                                                                                                                                                                                      EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                      by a lipid
                                                                                                                                                                                                                                                                                                                                                                         a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                  in no way
                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6;
                                                                                                                                              4.
```

Tue

```
RESULT 6
17KD_RICAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOT THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK OCCURS OF THE WORK 
RESULT 7
17KD_RICPA
11KD_RICPA
1D 17KD_R
1D 17KD_R
1D 10-0CT
1DT 01-0CT
1DT 01-0CT
1T 01-0CT
1T 00-0CT
1T kDa
1D 17 kDa
1D 17 kDa
1D 10-0CT
1D 00P.
10 0MP.
10 0MP.
10 0MP.
11 RN (1)
12 RN (1)
13 SEQUE
13 RA Pretz
17 17KD_R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Baird R.W., Ross B., Dwyer B.;
Submitted (OCT-1991) to the EMBL/GenBank/DDBJ databases.
-i- SUBCELLULAR LOCATION: Attached to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way use by non-profit institutions as long as its content is in no way use by non-profit institutions as long using by and for commercial modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rickettsiaceae; Rickettsieae; NCBI_TaxID=787;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rickettsia australis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .7KD_RICAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Outer membrane;
                                                                                                                                                                                                                  p50930;

01-0CT-1996 (Rel. 34, Last sequence update)

01-0CT-1996 (Rel. 34, Last annotation updat

01-0CT-1996 (Rel. 34, Last annotation updat

17 kDa surface antigen precursor (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_TER
                                                                                                                                                                                                                                                                                                                                            17KD_RICPA
                         SEQUENCE FROM N.A. STRAIN-MACULATUM;
                                                                                              NCBI_TaxID=35792;
                                                                                                                    Bacteria; Proteobacteria; alp
Rickettsiaceae; Rickettsieae;
                                                                                                                                                                       Rickettsia parkeri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213
       Pretzman
                                                                                                                                                                                                                                                                                                                                                                                                                                                               124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSLITISV---FLVGCAQ--NFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SKIMIIALAASMLQACNSPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL~VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----GOYCREYTOTVVIGGKQQKAYGNACRQPDGQ 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTYRNSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGLIGSKIGOSMDOODK----IKLNOSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYORYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          M74042; AAA26394.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C.I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
       stothard
                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         >154
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.1%; Score 268; 37.8%; Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alpha subdivision;
eae; Rickettsia.
          D.R.,
                                                                                                                                    alpha subdivision;
eae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E3AA833346FAC320
            Ralph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                             ation update)
(Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
                 D
                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                    Clark J.B.,
                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52;
                                                                                                                                                                Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                    Fuerst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Уď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
```

ť

```
RESULT b
17KD_RICRH
17KD_RICRH
17KD_RICRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RET FET FET SQ
   р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation between the Swiss Institute of Bioinformatics are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its to non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases i- SUBCELLULAR LOCATION: Attached to the outer membran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIPID
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Outer membrane; Lipoprotein; SIGNAL 1 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                                                                                                                                                                                                                                                                                                               p50931;
01-0CT-1996 (Rel. 34, Last sequence update)
01-0CT-1996 (Rel. 34, Last annotation update)
01-0CT-1996 (Rel. 34, Last annotation update)
17 kDa surface antigen precursor (Fragment)
Outer membrane;
SIGNAL 1
CHAIN 20
LIPID 20
NON_TER 154
                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM between Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-sor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                 Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C. submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane by a l
                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; alpha subdivision; Rickettsiales; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                  OMP
                                                                                                                                                                                                                                                                                                                                                                   Rickettsia rhipicephali.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                           PROSITE;
                                                                                        EMBL; U11020; AAB07706.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                   anchor (Probable).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGLIGSKIGOSMDOODK----IKLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYORYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SKIMVIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U17008; AAA82040.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20 >
20
154
154 AA;
                                                                             PS00013; PROKAR_LIPOPROTEIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
    20
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
      ; Lipoprotein;
1 19
0 >154
0 20
4 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        >154
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15897 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPROTEIN; 1.
Antigen; Signal.
BY SIMILARITY.
BY KDA SURFACE ANTIGEN.
N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 259; DB 1;
Pred. No. 1.7e-14;
                     POPROTEIN; 1.

Antigen; Signal.

BY SIMILARITY.

17 KDA SURFACE ANTIGEN.

N-ACYL DIGLYCERIDE (PRO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5D06F45F9DBD5EEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the outer membrane by a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                        moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                           (PROBABLE).
                                                                                                                                                                                         restrictions on
                                                                                                                                                                                                          EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                      Ŋ
                                                                                                                                                                                                            collaboration
Loutstation -
                                                                                                                                                                                                                                                                  lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                Ş
                                                         밁
                                                                              Ş
                                                                                                       В
                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SO
            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 57
                                                                                                                                                                Query Match
Best Local
                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-1996
01-OCT-1996
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17KD_RICMO P50929;
                                                                                                                                                                                                                 LIPID
NON_TER
                                                                                                                                                                                                                                                                                      EMBL; U11017; AAB07705.1;
                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                        modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                the European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                Stothard D.R., Ralph D.A., C Submitted (DEC-1994) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-OHIO 83-441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=33991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rickettsiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia montana
                                                                                                                                103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103
            120
                                    213
                                                                               157
                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        u
                                                                                                        ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                    thard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretzman C.; mitted (DEC-1994) to the EMBL/GenBank/DDBJ databases. SUBCELLULAR LOCATION: Attached to the outer membrane by a li
                                                                                                                                                                                                                                                                                                                                                                                                          anchor (Probable).
                                                                                                                              SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                       SKIMIIALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYITPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGLIGSKIGQSMDQQDK-----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKIMITALAASMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSLIIISV---FLYGC--AQNESRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                          GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                     GGLIGSKIGOSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN
            - RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -RNSTGQYCREYTQTVVIGGKQQKAYGNACLQPDGQ
                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                     mbrane; Lipoprotein; Antigen; Signal.

mbrane; Lipoprotein; Antigen; Signal.

1 19 BY SIMILARITY.

20 >154 17 KDA SURFACE ANTIGEN.
                                                                                                                                                                                                    20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 34, Crearce, (Rel. 34, Last sequence update); (Rel. 34, Last annotation update); (Rel. 34, Last annotation (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rickettsieae;
                                                                                                                                                                                                    154
15881 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15895 MW;
                                                                                                                                                                 19.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha subdivision; eae; Rickettsia.
                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 259;
Pred. No. 1
                                                                                                                                                                 Score 256; DB 1;
Pred. No. 2.9e-14;
                                                                                                                                                                                                                            N-ACYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                     A09C53B8769E31DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OCF85AD5D96DFEFB CRC64;
                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                            DIGLYCERIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.7e-14;
                                                                                                                                                                                                                                                                                                                                              There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rickettsiales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 154;
                                                                                                                                                                           Length
                                                                                                                                                                                                                           (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·Indels
                                                                                                                                                      Indels
                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                    a lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                           on
                                                                                                                                                                                                                                                                                                                                                           its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10

17KD_RAICAM
1D 17KD_RA
AC P50927
DT 01-OCT
DT 01-OCT
DT 01-OCT
DT 01-OCT
CO Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC Ricket
OC STRAIN
RA Stbmit
CC -----
CC This g
CC This g
CC the Eu
CC Use t
CC Or ser
CC entiti
CC entiti
CC Or ser
CC CHAIN
FT CHAIN
FT CHAIN
FT CHAIN
FT NON_T
SOUGHI
RESULT 11
CIPB_CLOTM
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                   LIPID
NON_TER
SEQUENCE
                                            Cleb.
Clostridium tuc.
Clostridium tuc.
                                                                                                                                                                   CIPB
           SEQUENCE FROM
                                 NCBI_TaxID=1515;
                                                                                                                                                     Q01866;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U11013; AAB07704.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=MO 85-1084;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17KD_RICAM
                                                                                         (Cellulose integrating
                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kDa
                                                                                                                                                                                                                                                                                                                        ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          anchor (Probable).
                                                                                                                                                                 CLOTM
                                                                                                                                                                                                                            -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    surface antigen precursor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                      Similarity 57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                   20
20
154
154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amblyommii.
                                                                    thermocellum
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD
                                                                                                                                                                                                                                                                                                                                                                                                                               >154
20
154
                                                                                                                                                                                                                                                                                                                                                                                                                     15879 MW;
                                                                                                                                                                                                                                                                                                                                                                                 19.1%;
                                                         Bacillus/Clostridium
                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                       29;
                                                                                                                                                                                                                                                                                                                                                                                Score 255;
Pred. No. 3.
                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                            В)
                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154 AA
                                                                                                                                                                 ₽
```

```
01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
                                                                                                    01-OCT-1994 (Rel. 30, Created)
01-OCT-1994 (Rel. 30, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Cellulosomal scaffolding protein B (Cellulosomal glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00013; PROKAR_LIPOPROTEIN; 1.
Outer membrane; Lipoprotein; Antigen; Signal.
SIGNAL 1 19 BY SIMILARTY.
CHAIN 20 >154 17 KDA SURFACE ANTIGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Stothard D.R., Ralph D.A., Clark J.B., Fuerst P.A., Pretz Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Attached to the outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a coefficient the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; alpha subdivision; Rickettsiaceae; Rickettsieae; Rickettsia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKIMIIALAASTLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                   KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGR 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAVLGGQVGAGMDEQDRRIAELTSQKALETAPNGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGLIGSKIGOSMDOODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-ACYL DIGLYCERIDE (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E4FBE4C29D943581 CRC64;
                                                                                (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .5e-14;
                                                                                                                                                                                                                                                                                                                                                                                            154
group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 154;
  Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pretzman C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þ
                                                                                                             S1/SL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lipid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6,
```

Tue

```
CIPA_CLOPM
ID CIPA_C
AC Q06851
AC Q06851
DT 01-JUN
DT 01-MAR
DE Cellul
DE glycop
GN CIPA.
OS Clostr
                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     *Identification of the cellulose-binding domain of the cellulosome subunit S1 from Clostridium thermocellum YS."; FEMS Microbiol. Lett. 78:181-186(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Poole D.M., Morag E., Lamed
Gilbert H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on way use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/entities requires a license agreement (See http://www.isb-sib.ch/announce/entities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=93146373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00942; CBD_3; 1.
Pfam; PF00963; Cohesin; 3.
Pfam; PF00404; Dockerin_1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00404; Dockerin_1; 2.
ProDom; PD001947; CBD_3; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00448; CLOS_CELLULOSOME_RI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR002105; Dockerin
InterPro; IPR002048; EF-hand.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cellulose
                                                       01-JUN-1994
01-NOV-1997
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FUNCTION: ACTS AS A SCAFFOLDING PROTEIN IN THE CELLULOSOME. IT PROMOTES BINDING OF CELLULOSE TO THE CATALYTIC DOMAINS OF THE PROMOTES BINDING OF THE MINE CELLULOLYTIC ENZYMES PROBABLY THROUGH THE BINDING OF THE NINE REPEARED DOMAINS WITH THE DUPLICATED SEGMENT OF 24 AMINO ACIDS REPEARED DOMAINS WITH THE DUPLICATED SEGMENT OF 24 AMINO ACIDS PRESENT IN CATALYTIC SUBNITS OF THE CELLULOSOME.

SUBCELLULAR LOCATION: CELL SURFACE.

SUBCELLULAR LOCATION: CELL SURFACE.

SUBCELLULAR LOCATION: CELL SURFACE.

SIMILARITY: A 24 RESIDUES DOMAIN IS REPEATED TWICE IN THIS ENZYME.
                                                                                                     Q06851;
                                                                                                                  CIPA_CLOTM
   Clostridium
                           glycoprotein
                                                                                                                                                                                                                                                   281
                                                                                                                                                                                            340
                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                    1 MSVEFYNSNKSAOTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTOGOTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               x68233; CAA48312.1; -. Q06851; 1NBC.
                                                                                                                                                                                                                 LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDDSHMRGCLQ 101
                                                                                                                                                                                                                                                 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA AI 339
                                                                                                                                                                                          IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                              degradation:

1 1 607

2 240

94 240

462 607

81 93

241 93

241 439

440 461

710 766

710 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR001956; CBD_3
                                                                                                                                                                                                                                                                                                                                                                                 <1
94
462
81
241
273
440
710
710
743
                             (Rel. 29, Created)
(Rel. 35, Last sequence update)
(Rel. 41, Last annotation update)
1 scaffolding protein A precursor (Cellulosomal
n S1/SL) (Cellulose integrating protein A) (Coh
                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=1490597;
                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cohesin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dockerin_1
                                                                                                                                                                                                                                                                                                                                                                       82491 MW;
                                                                                                                                                                                                                                                                                                                           18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cell wall; Glycoprotein; Repeat.
                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                            PRO/THR-RICH.
PRO/THR-RICH.
CELLULOSE-BINDING.
PRO/THR-RICH.
2 X 24 AA APPROXIM
                                                                                                                                                                                                                                                                                                              Score 245; DB Pred. No. 1.5e 16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bayer E.A., Hazlewood G.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X 147 AA APPROXIMATE REPEATS: (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                        BBF06DE5E094FE10 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                     24 AA APPROXIMATE REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RPT; 2.
                                                                                                                            1853
                                                                                                                                                                                                                                                                                                                                  DB 1;
.5e-12
                                                                                                                              AA
                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                      381
                                                                                                                                                                                                                                                                                                                       Indels
                                         A) (Cohesin)
                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                           ω
••
```

InterPro; InterPro; [nterPro;

IPR001956; (IPR002102; IPR002105; IPR002048;

; Cohesin. ; Dockerin_1. ; EF-hand.

1ANU; 23-JUL-97. 1AOH; 08-JUL-98. 1NBC; 26-SEP-97.

```
PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PARTER PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    resolution.": 273:701-713(1997).

L J. Mol. Biol. 273:701-713(1997).

C -!- FUNCTION. ACTS AS A SCAFFOLDING PROTEIN IN THE CELLULOSOME. PROMOTES BINDING OF CELLULOSE TO THE CATALYTIC DOMAINS OF TI
C CELLULOLYTIC ENZYMES.

C -!- SUBCELLULAR LOCATION: CELL SURFACE.

C -!- DOMAIN: CONTAINS 9 COPIES OF A DOMAIN (COHESIN) OF ABOUT 15(
C -!- DOMAIN: CONTAINS 9 COPIES OF A DOMAIN BORN BY THE CATAL

C RESIDUES THAT BINDS TO THE DOCKERIN DOMAIN BORN BY THE CATAL

C COMPONENTS OF THE CELLULOSOME.

C COMPONENTS OF THE CELLULOSOME.

C -!- DOMAIN: A 24 RESIDUES DOMAIN SEPERATED TWICE IN THIS ENZYMENT.

C WELL AS IN OTHER C. THERMOCELLUM CELLULOSOME ENZYMES. THIS DOMAIN: AS IN OTHER C. THERMOCELUM CELLUDOSOME ENZYMES. THIS DOMAIN: AS IN OTHER C. THERMOCELUM CELLUDOSOME ENZYMES. THIS DOMAIN: AS IN OTHER C. THERMOCELUM CELLUDOSOME ENZYMES. THIS DOMAIN: AS IN OTHER C. THERMOCELUM CELLUDOSOME ENZYMES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridiaceae; Clostridium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=1515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fujino T., Beguin P., Aubert J.-P.; "Organization of a Clostridium thermocellum gene cluster encoding the "Organization of a Clostridium thermocellum gene cluster possibly involved cellulosomal scaffolding protein CipA and a protein possibly involved in attachment of the cellulosome to the cell surface."; In attachment of the cellulosome to the cell surface."; J. Bacteriol. 175:1891-1899(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=93302508; PubMed=8316083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-ATCC 27405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cellulosomal SL-protein reveals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gerngross U.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1820-1853 FROM N.A. MEDLINE-93209931; PubMed-845883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        homology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Sequencing of a Clostridium thermocellum gene
"Sequencing of a Clostridium thermocellum gene
Cellulosomal SL-protein reveals an unusual degr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Demain A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.15 ANGSTROMS) OF 184-321
MEDLINE-97238934; PubMed-9083107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS) OF 368-522.
MEDLINE-97076134; PubMed-8918451;
Tormo J., Lamed R., Chirino A.J., Morag E., Bayer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "A cohesin domain from Clostridium thermocellum: the crystal structure provides new insights into cellulosome assembly."; structure 5:381-390(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Crystal structure of a bacterial family-III cellulose-binding domain: a general mechanism for attachment to cellulose."; EMBO J. 15:5739-5751(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Stertz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tavares G.A., Beguin P., Alzari P.M.; "The crystal structure of a type I cohesin domain at 1.7-A
                                                                                                                                                                                           EMBL; L08665;
EMBL; X67506; (
PIR; S36859; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=98022914; PubMed=9402065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                          entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L.J.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209931; PubMed=8458832;
Beguin P., Aubert J.-P
                                                                                                                                                                                                       S36859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bayer E.A., Morag E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8:325-334(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Romaniec
                                                                                                                                                                                                                                       CAA47840.1;
                                                                                                                                                                                                                                                           -; NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           м.Р.М.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kobayashi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lamed R., Yaron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OF
                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AND
                                                                                                                                                                                                                                                                                                                                                                                                           There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1213-1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    degree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bayer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Huskisson N.S.,
                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (cipA) encoding
ee of internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CELLULOSOME.
DOMAINS OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      s.,
                                                                                                                                                                                                                                                                                                                                                                                         уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shoham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoham
                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC
                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                               in no way
commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AS
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                               GUNI_CLOTM
Q02934;
Q1-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
CONFLICT
SEQUENCE
                                                                         "Gene sequence and procedium.";
Clostridium thermocellum.";
J. Gen. Microbiol. 139:307-316(1993).
-I- FUNCTION: THIS ENZYME CATALYZES THE ENDOHYDROLYSIS OF
-I- FUNCTION: THIS ENZYME CATALYZES, LICHENIN AND CEREAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00942; CBD_3; 1.
Pfam; PF00963; Cohesin; 9.
Pfam; PF00404; Dockerin 1; 2.
ProDom; PD001947; CBD_3; 1.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS000448; CLOS_CELLULOSOME_RPT; 2.
Cellulose degradation; Cell wall; Glycoprotein;
                                                                                                                                       STRAIN-NCIB 10682;
MEDLINE-93171873; PubMed-8436949;
Hazlewood G.P., Davidson K., Laux
                                                                                                                                                                                                           Clostridium thermocellum Bacteria; Firmicutes; Ba
                                                                                                                                                                                                                                                            01-FEB-1995 (Rel. 31, Creat
01-FEB-1995 (Rel. 31, Last
01-NOV-1995 (Rel. 32, Last
                                                                                                                                                                                                                                                                                                               CLOTM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                              Gilbert H.J.;
                                                                                                                                                                     SEQUENCE FROM N.A.,
                                                                                                                                                                                                   Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                      Hazlewood G.P.,
                                                                                                                                                                                       NCBI_TaxID=1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3D-structure.
                                                                                                                                                                                                                                          (Cellulase I).
                                                                                                                                                                                                                                                                                                                                                      428
                                                                                                                                                                                                                                                                                                                                                                                              369
                                                                                                                                                                                                                                                                                                                                                                1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                             linkages in cellulose.
PATHWAY: CELLULOSE DEGRADATION
SIMILARITY: BELONGS TO CELLULA
                                                         GLUCOSIDIC LINKAGES IN CELLULOSE, LICHENIN AND CEREAL BETA-GLUCANS. PRINCIPALLY ACTIVE AGAINST BARLEY BETA-GLUCAN. CATALYTIC ACTIVITY: Endohydrolysis of 1,4-beta-D-glucosidic
                    HYDROLASES).
 SWISS-PROT entry
                                                                                                                                                                                                                                                                                                                                                                                            LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 427
                                                                                                                                                                                                                                                                                                                                                     IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             889
1054
1219
1384
1548
1791
1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364
54
29
183
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                   precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u></u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28
523
1694
1694
182
322
322
322
303
1031
1031
11361
11361
11361
11846
11814
                                                                                                                                                                      AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                           18.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196831
 is
                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                          Bacillus/Clostridium group;
                                                                                                                                      .
.
 copyright.
                                                                                                                                                                                                                                                t sequence update)
t annotation update)
(EC 3.2.1.4) (EGI) (Endo-1,4-beta-glucanase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CELLULOSOMAL SCAFFOLDING PROTEIN A.
CELLULOSE-BINDING (BY SIMILARITY),
9 x 150 AA APPROXIMATE TANDEM REPEATS
1-1.
1-2.
1-3.
1-4.
1-5.
1-6.
1-7.
1-8.
1-9.
2 x 24 AA APPROXIMATE REPEATS.
2-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                              CELLULASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW;
                                                                                                                                       Laurie J.I., Huskisson N.S
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 245; DB 1;
Pred. No. 4.1e-12
                                                                                                                      of.
                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    v
                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                     CelI,
                                                                                                                                                                      QF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA (IN REF. 1).
3ABDDC03ABFC5372 CRC64;
 Ţ
                              FAMILY E (FAMILY 9
                                                                                                                                                                                                                                                                                                     879
is
                                                                                                                    family
 produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1853
                                                                                                                    (*)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Repeat;
                                                                                                                                                                                                                                                                                                                                                     469
                                                                                                                                                                                                            Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                    endoglucanase
                              얽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Signal;
                                                                             BETA-D-
                              GLYCOSYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                  4.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
```

```
QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GUNZ_CLOSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 14
Bronnenmeier K., Staudenbauer W.L.;
"Sequence analysis of the Clostridium stathermactive cellulase (Avicelase I):
and cellulose-binding domains.";
Mol. Gen. Genet. 223:258-267(1990).
-i- CATALYTIC ACTIVITY: Endohydrolysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                     P23659;
01-NOV-1991
01-NOV-1991
15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
ACT_SITE
ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                      Clostridium stercoracional Clostridium stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion stercoracion sterc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Probom; PD001947; CBD_3; 1.

PROSITE; PS00592; GLYCOSYL_HYDROL_F9_1; 1.

PROSITE; PS00698; GLYCOSYL_HYDROL_F9_2; 1.

PROSITE; PS00698; GLYCOSYL_HYDROL_F9_2; 1.
                                                                                                                                                                                                                                                                                                                                               Endoglucanase (Thermoactive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00942; CBD_3; 2.
Pfam; PF00759; Glyco_hydro_9; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no rest
use by non-profit institutions as los content
modified and this statement is not removed. Usage by an
entities requires a license agreement (See http://www.isb
                                                                                                                                                                                 SEQUENCE FROM N.A., STRAIN-NCIB 11745;
                                                                                                                                                                                                                                        NCBI_TaxID=1510;
                                                                                                                                                                                                                                                                  Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GUNZ_CLOSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR; A47704; A47704.
HSSP; P26221; 1TF4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; L04735; AAA20892.1;
                                                                                                                                                           MEDLINE=91066838; PubMed=2250652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001956; InterPro; IPR001701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VKAGQVTRWRNPDTGNSYSVEPVRTYQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFSRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
59; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e degradation; k
1 55
1 56
879
56 879
56 879
879
448 448
486 486
486 486
487
488 488
488 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                  (Rel. 20, Created)
(Rel. 20, Last sequence update)
(Rel. 36, Last annotation update)
se Z precursor (EC 3.2.1.4) (Endo-1,4-beta-glucanase)
ve cellulase) (Avicelase I).
                                                                                                                                                                                                                                                                                                      stercorarium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ·SNVTGNFF-NLSSPKEGADT------CL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WSNYNQSNDYSFKQACLRQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                    AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.18;
28.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Glyco_hydro_9
                                                                                                                                                                                                                                                                                     Bacillus/Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FGSGAG - - TLDPGGSV
                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENDOGLUCANASE I.
CATALYTIC.
CELLULOSE-BINDING (BY SIMI)
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 188.5; DB Pred. No. 7.3e-08 0; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                    OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210
                                                                                                                                      W.H.,
                                                                          Im stercorarium cel
I): identification
                                                                                                                                                                                                    26-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.
                 ٥f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                    AND
                 1,4-beta-D-glucosidic
                                                                                                                                        Kratzsch
                                                                                                                                                                                                                                                                                 group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and the
                                                                                                                                                                                                                                                                                     Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                celz
                                                                                                                                          .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                            z gene encoding
of catalytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EVQIRFSKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
```

```
RESULT 15
GUY2_CLOSS
ID GUY2_CLOSS
ID GUY2_CLOSS
AC P5090
DT 01-00
DT 01-00
DT 01-00
DT CLOSS
CCLOSS
OC CLOSS
OC Bactr
OC CLOSS
OC CLOSS
OC CLOSS
OC RACELY
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
RA SEQUU
                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bioinformatics Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pfam; pF00942; CBD_3; 2.
pfam; pF00759; Glyco_hydro_9; 1.
propom; pD001947; CBD_3; 1.
prOSITE; pS00592; GLYCOSYL_HYDROL_F9_1; 1.
pROSITE; pS00698; GLYCOSYL_HYDROL_F9_2; 1.
cellulose degradation; Hydrolase; Glycosidase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; X55299; CAA390
PIR; S12021; S12021
HSSP; P26221; 1TF4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
ACT_SITE
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001956; CBD_3.
InterPro; IPR001701; Glyco_hydro_9.
InterPro; IPR001701; Glyco_hydro_9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
SEQUENCE FROM N.A.
STRAIN-NCIB 11754;
Bronnenmeier K., Kundt K.,
Staudenbauer W.L.;
Submitted (FEB-1996) to the
                                                                                                                                                              p50900;
p1-0CT-1996 (Rel. 34, Created)
p1-0CT-1996 (Rel. 34, Last sequence update)
p1-NOY-1997 (Rel. 35, Last annotation update)
programmer (EC 3.2.1.91) (Exocellobiohydrolase
proglucanase II precursor (EC 3.2.1.91) (Exocellobiohydrolase
                                                                                                                                                                                                                                               CLOSR
                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria;
                                                                                                                                                                                                                                                                                                   944
                                                                                                                                                                                                                                                                                                                                                         899
                                                                               NCBI_TaxID=1510;
                                                                                                                                                                                                                                                                                                                                                                              61 LGNSYVDNTSKVTANEVKETASPTSTYDTYLDPSHMRGC--LQGSSLIIISVELVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linkages in cellulose.
SIMILARITY: CONTAINS MULTIPLE CELLULOSE-BINDING SITES.
SIMILARITY: BELONGS TO CELLULASE FAMILY E (FAMILY 9 OF GLYCOSYL
                                                                                                     ELY.
lostridium stercorarium.
lostridium stercorarium.
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYDROLASES).
                                                                                             ostridium
                                                                                                                                                 ,4-beta-cellobiohydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         x55299; CAA39010.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                            FSR-----QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGL 159
                                                                                                                                                                                                                                                                                                  FSKADWTDYIQTNDYSFSTNTSYG-----SNDRITVYISGVLVSGI
                                                                                                                                                                                                                                  CLOSR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
498
651
744
854
835
400
438
447
                                                                                                                                                                                                                                                                                                                                                         -GSNNITGTFVK-MAEPKEGADYYLETGFTDGAGYLQPNQSIEVQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA:
                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
986
641
738
831
986
986
400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        109512 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14.18; 27.6%;
       the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CELLUICOSE-BINDING (BY SIMILA
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                  Riedel K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN B.
                                                                                                                                                       II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 188; DB 1;
Pred. No. 9.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN C'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENDOGLUCANASE Z.
                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                       (Avicelase II).
                                                                                                                                                                                                                                        914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no restrictions as its content is in
                                    Schwarz W.H.,
                                                                                                                                                                                                                                          A
                                                                                                                  group; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36;
                                                                                                                                                                                                                                                                                                                                                                    -NR
                                                                                                                                                                           II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
```

```
Search completed: October Job time : 12.285 secs
                                                                            В
                                                                                                                QΨ
                                                                                                                                                        Ър
                                                                                                                                                                                            20
                                                                                                                                                                                                                                                       Query Match
Best Local 9
                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-91364686; PubMed=1909625;
Bronnenmeier K., Ruecknagel K.P., Staudenbauer W.L.;
Bronnenmeier K., Ruecknagel K.P., Staudenbauer W.L.;
Bronnenmeier K., Ruecknagel K.P., Staudenbauer W.L.;
Burification and properties of a novel type of
"purification and properties of a novel type of
"thermophile Clostridium stercorarium.";

Eur. J. Biochem. 200:379-385(1991).

Eur. J. Biochem. 200:379-385(1991).

FEATALYTIC ACTIVITY: Hydrolysis of 1,4-beta-D-glucosidic linkages
-i- CAMPALYTIC ACTIVITY: Hydrolysis of 1,4-beta-D-glucosidic linkages
-i- campalytic Activity: Hydrolysis of 1,4-beta-D-glucosidic linkages
-i- SIMILARITY: BELONGS TO CELLULASE FAMILY L (FAMILY 48 OF GLYCOSYL-
-i- SIMILARITY: BELONGS TO CELLULASE FAMILY L (FAMILY 48 OF GLYCOSYL-
-i- SIMILARITY: BELONGS TO CELLULASE FAMILY L (FAMILY 48 OF GLYCOSYL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [2]
CHARACTERIZATION.
STRAIN=NCIB 11754;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; 269359; CAA93280.1; -.
                                                                                                                                                                                                                                                                                                                                                        ProDom; PD001947; CBD_3; 1.
ProDom; PD011903; Glyco_hydro_48; 1.
ProDom; PD011903; Glyco_hydro_lase; Glycosidase; Cellulose degradation; Hydro_lase; Glycosidase; Cellulose degradation; Hydro_lase; TI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00942; CBD_3; 1.
Pfam; PF02011; Glyco_hydro_48; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interpro; IPR001956; CBD_3.
Interpro; IPR000556; Glyco_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; Q06851; 1NBC
                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                              826
                                                                                                                                                              769
                                                                                                                    63
                                                                                                                                                                                              3 VEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HYDROLASES).
                                                                                                                  NSYVDNTSKVTANFVKETASPTSTYDTYLD 92
                                                                                                                                                          IQSFNANTQEISNSIMPRFRIYNSGNTSIPLSEVKLRYYYTVDGDKPQNFWCDWASI---
                                                                              ----GSSNVTGTFVKMDGATTGA-DYYLE
                                                                                                                                                                                                                                                                                                                                                                                                                                   PROO844; GLHYDRLASE48.
                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                       914 AA;
                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                        34
                                                                                                                                                                                                                                                                                                                                            914
                                                                                                                                                                                                                                                                                                                           103020 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glyco_hydro_48
                                                                                                                                                                                                                                                                12.2%;
                           27,
                                                                                                                                                                                                                                               17;
                                                                                                                                                                                                                                                                Score 162.5; DE
Pred. No. 1e-05;
                                                                                                                                                                                                                                                                                                                                              EXOGLUCANASE II.
                             10:56:33
                                                                                                                                                                                                                                                                                                                           D0DB6017D6DFF82C CRC64;
                                                                                                                                                                                                                                                   Mismatches
                                                                                        849
                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                     30;
                                                                                                                                                                                                                                                                                                                                                                                        Signal.
                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                               914;
                                                                                                                                                                                                                                                         9;
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        non-
                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                           2
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
487
2885
285
285
285
285
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
276.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-677-374-6
1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             October 27, 2002, 10:56:01; Search time 16.8014 Seconds (without alignments) 1464.098 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>* 3 2 1</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MSVEFYNSNKSAQTNSITPI.....IYGTACPQPDGRWQVISTEK 256
231.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
221.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
201.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             283138 segs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR_71:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pir1: *
pir2: *
pir3: *
pir4: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length DB
   159
159
159
159
159
159
162
1162
1162
1483
1039
1039
1039
11331
11331
11331
11331
11331
11331
11331
1145
1155
                                                                                                                                                                                                                  A48954
T31337
T17120
D83169
F87413
G69593
AI3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A47704
S12021
T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S36859
T30433
C97012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A44140
D33971
B33971
A33971
G97860
C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A43802
S02711
                                         B83514
A41897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283138
                                                                                                                                                                                                                                                                                                                17K antigen precur scaffolding protein - Clo scaffolding protei probably celluloso endoglucanase I (E thermoactive cellu xylanase - Caldice cellulase (EC 3.2 cellulase (EC 3.2 cellulase (EC 3.2 cellulase (EC 3.2 centurase (EC 3.2 conserved hypothet by conserved hypothet by conserved hypothet by conserved mannase (EC 3.2 conserved hypothet by conserved hypothet by conserved hypothet by conserved mannase (EC 3.2 conserved hypothet by conserved hypothet by conserved hypothet by conserved mannase (EC 3.2 conserved hypothet by conserved hypothet by conserved hypothet hypothet by conserved hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypothet hypoth
outer membrane lip
conserved hypothet
cellulase homolog
cellulase (EC 3.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsial common
Rickettsial common
Rickettsial common
17K surface antige
                                                                                                                                           17K surface antig
cellulase (EC 3.2
cellulase (EC 3.2
                                                                                                                                                                                                                  hypothetical prot
cellulase (EC 3.2
17K surface antig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsial commo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cellulose-binding
```

45	44	43	42	41	40	39	38	37	36	35	34	υ U	32	31	J.
101.5	103	103	104	104.5	104.5	104.5	106.5	107	107	107.5	107.5	109	109	109	F07
7.6	7.7	7.7	7.8	7.8	7.8	7.8	8.0	8.0	8.0	8.1	8.1	8.2	8.2	8.2	۵. ۷
155	504	232	139	155	155	155	155	486	125	155	142	257	232	179	CCT
N	N	N	N	N	N	N	N	N	ν	Ŋ	Ņ	N	Ŋ	N	٨.
164130	S54744	AD3350	S58234	B85771	F90922	C64921	AG0443	I40548	D97478	AF0289	AD2696	в82837	G87629	AE0644	ALU693

ALIGNMENTS

RESULT 1 A44140

cellulose-binding protein A precursor - Clostridium cellulovorans C;Species: Clostridium cellulovorans C;Dete: 27-Jun-1994 #sequence_revision 27-Jun-1994 #text_change 15 C;Accession: A44140
R;Shoseyov, O; Takagi, M.; Goldstein, M.A.; Doi, R.H. Proc. Natl. Acad. Sci. U.S.A. 89, 3483-3487, 1992
A;Title: primary sequence analysis of Clostridium cellulovorans ce A;Reference number: A44140; MUID:92228810
A;Accession: A44140
A;Residues: Preliminary
A;Molecule type: genomic RNA
A;Residues: 1-1848 <SHO>

cellulose binding

pro

27-Jun-1994 #text_change 15-Oct-1999

RESULT 2 D33971 ricketts N;Altern C;Specie C;Date: C;Access R;Anders J: Bacte	Qy 239 Db 186	Qy 181 Db 144	Oy 121 Db 125	Qy 61 Db 93	Qy Db 3	Query Match Best Local Matches 11	A;Cross-rere C;Genetics: A;Gene: cbpA
RESULT 2 D33971 D33971 rickettslal common antigen precursor - Rickettsla prowazekli N;Alternate names: 17kD surface antigen; outer membrane protein (omp); RP833 C;Species: Rickettsla prowazekli C;Species: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 03-Nov-2000 C;Accession: D33971; B71645 R;Anderson, B.E.; Tzianabos, T. Bacteriol. 171, 5199-5201, 1989	9 GTACPQPD 246 	1 EKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKOEIY 238 :: :	1 RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180	1 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFS 120 	1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60 	Query Match 36.5%; Score 487; DB 2; Length 1848; Best Local Similarity 46.8%; Pred. No. 2.8e-32; Matches 116; Conservative 12; Mismatches 30; Indels 90; Gaps	C;Genetics: A;Gene: cbpA

```
A.Molecule type: DNA
A;Residues: 1-159 <AN2>
A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386135
A;Cross-references: GB:AJ235273; GB:AJ235269; NID:g3861237; PIDN:CAA15258.1; PID:g386135
A;Cpenental source: strain Madrid E
C;Genetics:
A;Gene: omp; RP833
C;Superfamily: rickettsial common antigen
C;Keywords: surface antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsmark Nature 396, 133-140, 1998
A;Title: The genome sequence of Rickettsia prowazekii and the origin of mitochondria. A;Reference number: A71630; MUID:99039499
A;Accession: B71645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-159 < AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Comparative sequence analysis of A; Reference number: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Note: the sequence in GenBank entry RIRANT17KC, release 109.0, (PID:g152462) omits the R; Andersson, S.G.E.; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Ponten, T.; Alsmark, U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:M28482; NID:g152461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a
A;Reference number: A33971; MUID:89359171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rickettsial common antigen precursor C;Species: Rickettsia conorii C;Date: 16-Mar-1990 #sequence_revision C;Accession: B33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-159 <AND>
A; Cross-references: GB:M28479; NID:g152463; PIDN:AAA26379.1; PID:g152464
                                                                                                                                                                                                                                                                                                                                   C; Superfamily: rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: B33971
밁
                                Qy
                                                                                Db
                                                                                                                 Qy
                                                                                                                                                                 DЬ
                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103
                                                                                                                                                                                                        103 SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          σı
                                                                                                                                                                                                                                                                          Local Similarity
                                                                                  64
                                                                                                                                                                   Ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSLIIISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RNSAGQYCREYTQTVIIGGKQQKTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLGGQIGASMDEQDRRLLELTSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SKIMIIALAASMLQACNGQSGMNKQGTGTLLGGAGGALLGSQFGQGKGQL-VGVGVGALL
                                                                                                                     GGLIGSKIGOSMDOODK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                 SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                          KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 253
                                                                                  GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61;
      -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21.6%;
                                                                                                                                                                                                                                                    21.3%; Score 285; DB 2; 37.9%; Pred. No. 1.1e-16; tive 31; Mismatches 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 288; DB 2;
Pred. No. 6.3e-17;
2; Mismatches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rickettsia conorii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genus-common rickettsial antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52;
                                                                                                                                                                                                                                                             53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 159
             159
                                                                                                                                                                                                                                                                                                  Length 159
                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rickettsial antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-Aug-1999
                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                   6
```

```
RESULT 4
A33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J. Bacteriol. 171, 5199-5201, 1989
A;Title: Comparative sequence analysis of a
A;Reference number: A33971; MUID:89359171
A;Accession: A33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rickettsial common antigen precursor C;Species: Rickettsia rickettsii C;Date: 16-Mar-1990 #sequence_revision C;Accession: A33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Cross-references: GB:M28480; NID:g152457; PIDN:AAA26376.1; PID:g152458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Anderson, B.E.;
J. Bacteriol. 171,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Superfamily: rickettsial common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17K surface antigen precursor [imported] - Rickettsia conorii (strain Malish C;Species: Rickettsia conorii C;Species: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001 C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 22-Oct-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                      R:Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Samson, Science 293, 2093-2098, 2001
A;Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowazekii.
A;Reference number: A97700; MUID:21442074; PMID:11557893
A;Accession: G97860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                        В
                                                                                                         Qy
                                                                                                                                                망
                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                               C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                    A;Residues: 1-159 <KUR>
A;Cross-references: GB:AE006914; PIDN:AAL03825.1;
                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residués: 1-159 <K
                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary
                                                                                                                                                                                                                                                                                                                  A; Gene:
                                                                                                                                                                                                                                                                                                                                      C; Genetics:
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                    103 SSLITISV---FLVGC--AQNFSRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVL 156
 120
                                                                                                             157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U
                                                                          64
                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                dwo
                                                                                                                                                  տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSLIIISV---FLVGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KOERROOYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \tt SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                                                                                                                                GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY
                                                                                                           GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
 - RNSTGQYCREYTQTVVIGGKQQKAYGNACRQPDGQWQVVN
                                 KOERROOYCREFQOKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61;
                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                   rickettsial common antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tzianabos, T.
, 5199-5201, 1989
                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21.3%; 37.9%;
                                                                                                                                                                                                                                              21.3%; 37.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31;
                                                                                                                                                                                                                              31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 285; DB 2;
Pred. No. 1.1e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antigen
                                                                                                                                                                                                                            Score 285; DB 2; ...
Pred. No. 1.1e-16; ...
Pred. No. 1.3e-36; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-mar-1990 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genus-common
                                                                                                                                                                                                                                                                                                                                                             PID:g15620425; GSPDB:GN00173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159
         159
                                                                                                                                                                                                                                                                    Length 159
                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-Aug-1999
                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                      6.
```

```
RESULT 8
PC6006
PC6006
Scaffolding protein CipC precursor - Clostridium cellulolyticum (fragment)
Scaffolding protein CipC precursor - Clostridium cellulolyticum
C;Specles: Clostridium cellulolyticum
C;Specles: Clostridium cellulolyticum
C;Date: 17-Aug-1990 #sequence_revision 16-Aug-1996 #text_change 13-Nov-1998
C;Accession: PC6006
R;Pages, S; Belaich, A; Tardif, C.; Reverbel-Leroy, C.; Gaudin, C.; Belaic
J. Bacteriol. 178, 2279-2286, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Anderson, B.E.; Regnery, R.L.; Carlone, G.M.; Tzianabos, T.; McDade, J.E.; J. Bacteriol. 169, 2385-2390, 1997
A;Title: Sequence analysis of the 17-kilodalton-antigen gene from Rickettsia A;Reference number: A25972; MUID:87222152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A25972

17K antigen precursor - Rickettsia rickettsii

C:Species: Rickettsia rickettsii

C:Date: 21-May-1988 #sequence_revision 21-May-1988 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA
A;Residues: 1-159 <AND>
A;Cross-references: GB:M28481; NID:g152459; PIDN:AAA26377.1; PID:g152460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Comparative sequence analysis of A;Reference number: A33971; MUID:89359171 A;Accession: C33971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rickettsial common antigen precursor c;Species: Rickettsia typhi C;Date: 16-Mar-1990 #sequence_revision C;Accession: C33971
                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Anderson, B.E.; Tzianabos, T.
J. Bacteriol. 171, 5199-5201, 1989
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Superfamily: rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-159 < AND>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A25972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Superfamily: rickettsial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:M16486; NID:g152467; PIDN:AAA26381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                          103
                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27
                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                       SSLITISY---FLVGC--AQNESRQEVGAATGAVVGGVAGQLEGKGSGRVSMAIG-GAVL 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KLNOSLEKVKAGOVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQK 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRQEVGAATGAVVGGVAGQLFGKGSGRVSMAIG-GAVLGGLIGSKIGQSMDQQDK----I 174
                                                                                                                                                                                                                                                             GAVLGGQIGAGMDEQDRRLAELTSQRALETAPSGSNVEWRNPDNGNYGYVTPNKTY----
                                                                                                                                                                                                                                                                                                                                      SKIMIIALATSMLQACNGPGGMNKQGTGTLLGGAGGALLGSQFGKGKGQL-VGVGVGALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QTTYGNACRQPDGQWQVVN 159
                                                                                                                                                                                        -RNSTGQYCREYTQTVVIGGKQQKAYGDACRQPDEQWQVVN
                                                                                                                                                                                                           KQERRQQYCREFQQKAMIAGQKQEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                              GGLIGSKIGQSMDQQDK----IKLNQSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYN 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QEIYGTACPQPDGRWQVIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSQRALESAPSGSNIEWRNPDNGNHGYVTPNKTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NKQGTGTLLGGAGGALLGSQFGHGKGQL-VGVGVGALLGAVLGGQIGASLDEQDRKLLEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                            20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      common
                                                                                                                                                                                                                                                                                                                                                                                                               31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                           Score 276; DB 2;
Pred. No. 6.4e-16;
1; Mismatches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 276.5; DB 2
Pred. No. 5.8e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-Mar-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genus-common
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -RNSTGQYCREYTQTVVIGGKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46;
                                                                                                                                                                                                                                                                                                                                                                                                               54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #text_change
                                                                                                                                                                                        159
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rickettsial antigen gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PID:g152468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rickettsia rickettsii
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                     Belaich,
                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85
                                                                                                                                                                                                                                                                                                                                                                                                             6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Z.Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
S36859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;188-292/Domain:
F;293-439/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Genetics:
                                    submitted
                                                         R;Beguin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
```

```
A;Gene: cipC
F;1-27/Domain: signal sequence *status predicted <SIG>
F;28-586/Product: scaffolding protein CipC *status predicted
F;28-187/Domain: cellulose binding *status predicted <CBD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-586 < PAG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Interaction between the endoglucanase A; Reference number: PC6006; MUID:96218696 A; Accession: PC6006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;440-586/Domain: hydrophobic <HYB2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:U40345; NID:g1314291; PID:g1314292
A;Experimental source: ATCC 35319
                                                                                                                                                                                                                                                                                                                                                                                                            LGNSYVDNTSKVTANFVKETASPTSTYDTYLD---PSHMRGCLQGSSLIIISVFLVGCAQ 117
                                                                                                                                                                                                 -TINPTSISAKAGSFADTKITLTPNGNTFNGIS
                                                                                                                                                                                                                                IKLNQSLEKVKAG-----QVTRWRNPDTGNSYS
                                                                                                                                                                                                                                                                                                     NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
72; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hydrophilic <HYL>
hydrophobic <HYB1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18.7%;
Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <HYB1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                  -GSYMDWQKISAFVGGTLAYG--STPDGGNPPPQDP
 January
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249; DB 2;
No. 5.7e-13;
                                                                                                                                                                                                                                  201
                                                                                                                                                                                                 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CelA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the scaffolding protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <MAT>
                                                     01-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cipc
```

cipA protein - Clostridium thermocellum N;Alternate names: probable cellulosome protein large chain SL C;Species: Clostridium thermocellum C;Species: Clostridium thermocellum C;Date: 11-Jan-195 #sequence_revision 13-Jan-1995 #text_change C;Accession: S36859; S33527; S25767; S28659; T18261 R;Gerngross, U.T.; Demain, A.L. R; Fujino, T.; Beguin, P.; Aubert, J.P. FEMS Microbiol. Lett. 94, 165-170, 1992 A; Title: Cloning of a Clostridium thermocellum A; Reference number: S25767 A; Accession: S25767 A;Molecule type: DNA
A;Residues: 1216-1232,'Y',1234-1241,'T'
A;Cross-references: EMBL:X67406 A; Molecule type: DNA A; Residues: 1-1615,1617-1854 <GI A; Cross-references: EMBL: L08665 R;Gerngross, U.T.; Romaniec, M.P.M.; Kobayashi, T. Mol. Microbiol. 8, 325-334, 1993
A;Title: Sequencing of a Clostridium thermocellum A;Reference number: S33527; MUID:93302508 A; Molecule type: DNA A; Residues: 1-1854 <GER> A; Reference number: \$36859 A; Accession: \$36859 submitted to the EMBL Data A; Reference number: A; Accession: S28659 A;Status: preliminary A; Accession: S33527 A; Cross-references: EMBL:L08665 A;Status: preliminary to the EMBL Data Library, ce number: S28659 August 1992 ,1243-1319, DNA T., , R gene fragment encoding Huskisson, ,1321-1615,1617-1854 (cipA) encoding N.S.; polypeptides Demain, the

cellulosom A.L.

```
A;Molecule type: DNA
A;Residues: 1216-1232,'Y',1234-1241,'T',1243-1319,'R',1321-1615,1617-1768,'R',1770-1854
A;Cross-references: EMBL:X67406
R;Fujino, T.; Beguin, P.; Aubert, J.P.
J. Bacteriol. 175, 1891-1899, 1993
J. Bacteriol. 175, 1891-1899, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1821-1854 <FU2>
A; Cross-references: EMBL:X6
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: Organization of a Clostridium thermocellum gene cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Reference number: 218847; MUID:93209931
A;Accession: T18261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  scaffolding protein - Clostridium josui
C;Species: Clostridium josui
C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:AB004845; NID:g3445476; PIDN:BAA32429.1; PID:g3445477 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; translated A;Molecule type: DNA A;Residues: 1-1162 <KAK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Reference number: 220837; MUID:98361925
A;Accession: T30433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 53
                                                                                      RESULT 11
C97012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    дЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Cloning and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Kakiuchi, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
probably cellulosomal scaffolding protein
C; Species: Clostridium acetobutylicum
                                                                                                                                                                                                                                                                                                                                                                         дb
                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kakiuchi, M.; Isui, A.; Suzuki, K.; Fujino, Bacteriol. 180, 4303-4308, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369 LKVEFYNSNPSDTTNSINPQFKVTNTGSSAIDLSKLTLRYYYTVDGQKDQTFWCDHA-AI 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                                                                                                                                                                                                                                                                                                152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cipA
                                                                                                                                                                                                                                         198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MSVERYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60 :||:|| ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| | ::|| ::|| | ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| ::|| 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IGSNGSYNGITSNVKGTFVKMSSS-TNNADTYLEISFTGGTLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGN--SYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQ 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGNSYVDNTSKVTANFVKETASPTSTYDTYLDP--SHNRGCL-QGSSL1I1SVFLVGCAQ 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :||:|| : ::|| | :|| | :|| | | :|| | | :|| | :|| | :|| | :|| | | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|| | :|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGNNYMDVTSKYSGTF-NEVSPAVTNADHYLEVALSSDAGSLPAGGSIEIQTRFARNDWS 151
                                                                                                                                                                                                                                                                                                         IKLNOSLEKVKAGO
                                                                                                                                                                                                                                                                                                                                                                                NFDQSNDWSYTSA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                NFSRQEVGAATGAVVGGVAGQLFGKGS----GRVSMAIGGAVLGGLIGSKIGQSMDQQDK
                                                                                                                                                                                                                                            -KISPTSISAKQGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T30433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL: x67506; NID: g296879; PID: g296880;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA sequencing of the genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18.4%; 51.5%;
                                                                                                                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17.5%;
                                                                                                                                                                                                                                                210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 245; DB 2
Pred. No. 5e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 233.5; DB 2; pred. No. 2.6e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                           -GSYMDWQKIAAFVGGTLVYG--STPNGDDNPTQDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB/EMBL/DDBJ
                                                                       precursor,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T.; Fujino, E.; Kimura,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1854;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         469
                                                                                  secreted, cellulose-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clostridium josui scaffolding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIDN:CAA47840.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T.; Karita,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  173
                                                                                                                                                                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s.;
                                                                                                 col
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                 δõ
                                                                                                                                                                 Вb
                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                         183
```

```
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001 C;Accession: C97012 C;Accession: C97012 R;Nolling, J; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibt, Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.

J Bacteriol. 183, 4823-4838, 2001
A;Reference number: A96900; MUID:21359325; PMID:21359325
A;Accession: C97012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA A; Residues: 1-1483 <KUR> A; Residues: 1-1483 <KUR> A; Cross-references: GB:AE001437; PIDN:AAK78886.1; A; Experimental source: Clostridium acetobutylicum C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               endoglucanase I (EC 3.2.1.-) CelI - Clostridium thermocellum endoglucanase I (EC 3.2.1.-) CelI - Clostridium thermocellum c;Species: Clostridium thermocellum c;Species: Clostridium thermocellum c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 c;pate: 19-pec-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-1999 f;pate: 19-pec-1993 #sequence_revision 18-Nov-1993 #sequence_revision 18-Nov-1994 #text_change 15-Oct-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: CAC0910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
A; Molecule type: DNA; protein
A; Molecule type: CNA;
A; Molecule type: CNA;
A; Molecule type: CNA;
A; Molecule type: CNA;
A; Molecule type: CNA;
A; Molecule type: CNA;
A; Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecule type: Molecu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Gene sequence and properties of Cell, A; Reference number: A47704; MUID:93171873 A; Accession: A47704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Keywords: glycosidase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                           123
                                                                                                                                                                                                                                                                     800
                                                                                                                                                                                                                                                                                                                                                                                                                                                     742
                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                       MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RQEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NGYNYQTITSNVVGTFV-AMDNATATADHYLEISFSNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LGNSVYDNTSKYTANFYKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNES 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKYKAGQYTRWRNPDTGNSYS
                                                                                                                                                                      EVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLNQSLEK 182
                                                                                                                                                                                                                                                            N----SNVTGNFF-NLSSPKEGADT-----
                                                                                                                                                                                                                                                                                                                                                 NSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQNFSRQ 122
VKAGQVTRWRNPDTGNSYSVEPVRTYQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 28.4
57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 28.4
59; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WSNYDQSNDYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.1%; 28.4%;
                                                                                                   -FGSGAG--TLDPGGSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 223.5; DB 2
Pred. No. 2.4e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 188.5; DB 2
pred. No. 1.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                   210
                                                                                                                                                                                                                                                                                             -CL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PID:g15023809;
ATCC824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -DAGSSLEVQCRVAKND--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PID: g144808
NCBIP: 125638)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1483;
                                                                                                                           EVQIRFSKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSPDB: GN00168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gibson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                848
                                                                                                                                                                                                                                                                                                           821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from Clostrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.;
```

G

```
RESULT 13
$12021
$12021
thermoactive cellulase - Clostridium stercorarium
N;Alternate names: avicelase I
C;Species: Clostridium stercorarium
C;Species: Clostridium stercorarium
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 24-Jul-1997
C;Accession: $12021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Morris, D.D.; Gibbs, M.D.; Ford, M.; Thomas, J.; Bergquist, submitted to the EMBL Data Library, December 1997 A;Description: Family 10 and 11 xylanase genes from Caldicellu A;Reference number: 220972 A;Accession: T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          xylanase - Caldicellulosiruptor sp.
C;Species: Caldicellulosiruptor sp.
C;Date: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text_change 02-Sep-2000
C;Accession: T31085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Jauris, S.; Ruecknagel, K.P.; Schwarz, W.H.; Kratzsch, P.; Bronnenmeier, K.; Staudenba Mol. Gen. Genet. 223, 258-267, 1990
A;Title: Sequence analysis of the Clostridium stercorarium celz gene encoding a thermoach
RESULT
A43802
                                                                               밁
                                                                                                                ş
                                                                                                                                                            β
                                                                                                                                                                                           õ
                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-1779 < MOR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-986 <JAU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: S12021; MUID: 91066838 A; Accession: S12021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                        A; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:AF036924; NID:g2760905; PID:g2760909; PIDN:AAB95326.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                          Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                         1114 LKVLYKNNETSASTGSIRPWFKIVNGGSSSVDLSRVKIRYWYTVDGDKPQSAVCDWAQIG 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           944 FSKADWTDYIQTNDYSFSTNTSYG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          999
                                                                                                                                                                                                 59 ALLGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 LGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGC--LQGSSLIIISVFLVGCAQN 118
                                                                                                                                                                                                                                                                                                                                                                                                     xynC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                              1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYXYTSDGTQGQTFWCDHA--G 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHAGAL 60
                                                                                                      FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSM 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----GSNNITGTFVK-MAEPKEGADYYLETGFTDGAGYLQPNQSIEVQ-----NR 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IQIQMENGNTSDKTNGIMPRYRLTNTGTTPIRLSDVKIRYYYTIDGEKDQNEWCDWSSV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----WSNYNQSNDYSFKQACLRQR 868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                            -SNVTFNFVKLT-SGVSGADYYL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -QEVGAATGAVVGGVAGQLFGKGSGRVSMAIGGAVLGGL 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14.18; 27.68;
                                                                                                                                                                                                                                                                                                                                         11.3%;
                                                                               AGQLQPGKDTGDIQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Schwarz, W.H.; Kratzsch, P.; Bronnenmeier,
1990
                                                                                                                                                                                                                                                                                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 188; DB 2;
Pred. No. 1.4e-07;
Pred. Mismatches 58
                                                                                                                                                                                                                                                                                                                    Score 151.5; DB 2; Pred. No. 0.00032; 5; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----SNDRITVYISGVLVSGI 984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caldicellulosiruptor sp. Rt69B.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 986;
                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P.L.
                                                                                                                                                                                                                                                                                                                      51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36;
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6,
                                                                                                                                                                                                                                                                                                                        6;
```

Search completed: (Job time : 19.8014

October

27,

2002,

10:58:43

```
C; Keyworus. y-z
F; 20-320/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cellulase (EC 3.2.1.4) / cellulose 1,4-beta-cellobiosidase (EC 3.2.1.91) - Caldocellu N;Alternate names: endo-1,4-beta-glucanase C;Species: Caldocellum saccharolyticum C;Date: 30-Jan-1993 #sequence_revision 30-Sep-1993 #text_change 10-Jul-1998 C;Accession: A43802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Pathway: cellulose degradation
C:Superfamily: Streptomyces endo-1,4-beta-xylanase A homology
C:Superfamily: Streptomyces endo-1,4-beta-xylanase A homology
C:Keywords: glycosidase; hydrolase; polysaccharide degradation
E:20-320/Domain: Streptomyces endo-1,4-beta-xylanase A homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Saul, D.J.; Williams, L.C.; Grayling, R.A.; Chamley, L.W
Appl. Environ. Microbiol. 56, 3117-3124, 1990
A;Title: CelB, a gene coding for a bifunctional cellulase
A;Reference number: A43802; MUID:91136262
  밁
                                      Qy
                                                                                   В
                                                                                                                         ρ
                                                                                                                                                                       밁
                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-915 <S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Reference number: A; Accession: A43802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Description: hydrolysis of 1,4-beta-D-glucosidic linkages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: EMBL: X13602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                         433
                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                            411
                                          238
                                                                                     458
                                                                                                                              178
                                                                                                                                                                                                                                                                                                                                                351 IKVLYANKETNSTTNTIRPWLKVVNSGSSSIDLSRVTIRYWYTVDGERAQSAVSDWAQIG 410
  499
                                                                                                                                                                                                                                                                                                       59
                                                                                                                                                                                                                                                                                                                                                                                      1 MSVEFYNSNKSAQTNSITPIIKITNTSDSDLNLNDVKVRYYYTSDGTQGQTFWCDHA--G 58
                                        YGTACPQPDGRWQVISTEK 256
                                                                                                                         QSLEKVKAGQVTRWRNPDTGNSYSVEPVRTYQRYNKQERRQQYCREFQQKAMIAGQKQEI 237
                                                                                                                                                                       ----EIGFKSG-----AGQLQPGKDTGEI----
                                                                                                                                                                                                               FSRQEVGAATGAVVGGVAGQLF-GKGSGRVSMAIGGAVLGGLIGSKIGQSMDQQDKIKLN 177
                                                                                                                                                                                                                                                          A-----SNVTFKFVK-LSSSVSGADYYL-----
                                                                                                                                                                                                                                                                                            ALLGNSYVDNTSKVTANFVKETASPTSTYDTYLDPSHMRGCLQGSSLIIISVFLVGCAQN 118
----PSTNDDWLYVSGNK
                                                                                                                                                                                                                                                                                                                                                                                                                                      60;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <SAU>
                                                                                   DWSNYNQGNDWSW--LQSMTSYGENEKVTAYI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.0%;
23.2%;
512
                                                                                                                                                                                                                                                                                                                                                                                                                                      35;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 147; DB 2;
Pred. No. 0.00034;
5; Mismatches 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chamley, L.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                      64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 915;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       not compared
                                                                                     -DGVLVWGQE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Love, D.R.;
                                                                                                                                                                         ---QIRFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               beta-D-glucans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      extreme thermophil
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       with conceptual
                                                                                                                                                                                                                                                               432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bergquist,
                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               such
```

as

ס

THIS PAGE BLANK (USPTO)